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DEDICATION

To Nathaniel, who always believes in me.

ACKNOWLEDGEMENTS

Thank you to the Palestinian farmers who opened up to me and shared your stories. I will always be in awe of your strength and determination in the face of such overwhelming odds.

Thank you to Carol Sardonini for your excellent proofreading, editing, and advice. Your help has been invaluable and much appreciated.

Thank you to Dr. Glavanis, Dr. McMahon, and Dr. El Musa for being so willing to work with me and offer advice and guidance.

ABSTRACT

The American University in Cairo

The Palestinian Agricultural Sector: Deepening Dependency and the Failure of International Development Aid

Nicole D. Halbert

Advised by: Dr. Pandeli Glavanis

This research argues that developed aid given to the Palestinian agricultural sector does not help lead to Palestinian self-sufficiency. Rather, Palestinian agriculture is completely dependent on Israel and funding for agricultural development projects furthers Palestinian dependency and economic interconnection. This research relies heavily on past academic analyses and fieldwork conducted in Palestine in October, 2011. This research concludes that development aid should be invested in areas where the Palestinian National Authority has greater control such as education and healthcare.

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ABBREVIATIONS

ARIJ – Applied Research Institute – Jerusalem

GM – genetically modified

HLT – Holy Land Trust

IDF – Israel Defense Forces

JRV – Jordan River Valley

JVS – Jordan Valley Solidarity

JWC – Joint Water Committee

LRC – Land Research Center

MoA – Ministry of Agriculture

NIS – New Israeli Shekel

PARC – Palestinian Agricultural Relief Committee

PCBS – Palestinian Central Bureau of Statistics

PHG – Palestinian Hydrology Group

PLC – Palestinian Legislative Council

PLO – Palestinian Liberation Organization

PNA – Palestinian National Authority

WV – World Vision

INTRODUCTION

This research analyzes the Palestinian agricultural sector and highlights its dependence on Israel. The initial research began with an interest in water shortage along the Jordan River Valley and developed into an analysis of how international development aid to Palestine has had many unexpected consequences. This research follows three themes: Israeli economic, political, and physical control over the Palestinian agricultural sector; the dependence the Palestinian agricultural sector on Israel for virtually all inputs and outputs and how development aid contributes to and perpetuates this dependence.

In order to create a viable and independent Palestinian state, there must be a realistic understanding of the current Palestinian situation. Decisions regarding funding and allocation of resources must be predicated on determination of the strengths and weaknesses of Israeli control. Will development aid or investment build a truly independent institution or practice, or will it further entrench a web of imposed dependency? If the goal of aid to Palestine is to increase self-reliance and autonomy, than acknowledging the influence Israel has over the Palestinian agricultural sector is vital in allocating this aid.

The analytical framework for this work is based on the political economy approach characterized by Sara Roy, Neve Gordon, Eyal Weizman, and Shir Hever. *Israel's Occupation* by Neve Gordon, *Failing Peace: Gaza and the Palestinian-Israeli Conflict* by Sara Roy and *Hollow Land: Israel's Architecture of Occupation* by Eyal

Weizman were extremely useful. In addition to these works, *Israel: A Colonial-Settler State* by Maxime Rodinson and *The Political Economy of Israel's Occupation: Repression Beyond Exploitation* by Shir Hever were also very important in developing my theoretical framework.

Israeli state formation and the historical interactions between the two parties have played a major role in shaping the Palestinian agricultural sector. The merging of the Palestinian and Israeli economies and the failure of Oslo to bring about any change in the dependency of Palestinians has led to the present situation in Palestine. The institutions that have developed over the years, such as the Joint Water Committees, play a role in perpetuating the dependency of Palestinian farmers.

Many factors have combined to form structures of control over the Palestinian population and to increase the dependency of Palestinian farmers. I highlight development aid and stress the practical and material reasons for developments in Israel-Palestine. This is not to belittle Palestinian agency, certainly Palestinians span a wide variety of viewpoints, lifestyles, and experiences. However, my analytical framework emphasizes how the history and structure of the Israeli-Palestinian conflict has led to dependency of the Palestinian agricultural sector.

Methodology

The fieldwork interview sample group consisted of seven semi-structured interviews with Palestinian farmers in the West Bank, four interviews with Palestinian agronomists or agricultural experts, and four interviews with Palestinian fruit and

vegetable vendors. Also, through a focus group, under the auspices of Mr. Feras Badran of the Applied Research Institute Jerusalem (ARIJ), I was able to speak with four farmers who were the heads of different Palestinian agricultural cooperatives. I chose to use semi-structured interviews because this allowed me to follow a list of questions but gave me the leeway to further explore or ask for clarification of responses. This allowed me, I believe, to gain the trust of the farmers I worked with and gave me greater flexibility during the interview process.

In order to recruit participants for this research I contacted the groups Jordan Valley Solidarity, Holy Land Trust and the Applied Research Institute Jerusalem (ARIJ) asking for their help in introducing me to Palestinian farmers who were willing to participate in this research study. This initial introduction helped to make participants feel more at ease since I was working through an organization they recognized and trusted. The demographic make-up of the participants tended to favor older male heads of the family as the initial contact which then lead to introductions with the rest of the family. Farming in Palestine tends to be a family affair so I often interviewed fathers, sons, wives, and daughters together. Social links and networks play a large role in Palestinian life. Once I had made a few initial contacts these people were often able to introduce me to farmers or point me in the right direction. An introduction from another Palestinian helped in alleviating stress and ensured that participants felt less threatened.

There were certain dangers in conducting interviews under an occupation. Interviewing Palestinians under constant duress made it harder to gain their trust and it

was at times difficult to persuade Palestinians to speak freely with me about the state of Palestinian agriculture.

I used a process of triangulation to augment my research. Not only did I conduct interviews with Palestinian farmers, I also spoke to a number of Palestinian experts in the region regarding their views on the lives of Palestinian farmers and the impact development aid and market interconnectedness have had on Palestinian agriculture. I asked these experts how they viewed the dependency of the Palestinian agriculture sector and how this fit into the greater scheme of the overall Israeli-Palestinian conflict. I utilized secondary sources in Palestine and these texts combined with individual interviews and expert opinions have helped to make me more confident of my findings and have reinforced my results.

I acknowledge that the fieldwork entails a degree of possible error as some accuracy is always lost in translation. Moreover, how I steered conversations and the irremovable filter of my own background and research affected how I carried out the project. The information cited from my interviews displays as evenhanded a selection of the wealth of my interviews as can be had, and demonstrates, as I show through thesis, the interconnectedness and complete dependence of the Palestinian agricultural sector on Israel.

Materials

My research focuses on the current agricultural situation in the West Bank and the failure of development aid. I utilized written materials, both primary and secondary. I

used books and academic articles to form an understanding of the basis for the conflict as well as situating it within the regional setting. These written materials allowed me to crystallize my argument and situate it within the already existing literature. I looked at publications and presentations focusing on the state of Palestinian agriculture from Palestinian agricultural research organizations. These often gave very detailed information regarding the state of agriculture in the region.

October 16 – 28, 2011 I traveled to the West Bank to carry out the necessary fieldwork for this research. I spent approximately two weeks there to collect data, gaining insight into the lives of Palestinian farmers. I conducted interviews with various Palestinian farmers, agricultural experts, and fruit and vegetable vendors. The fieldwork allowed me to gain a much clearer understanding of the daily life and experiences of Palestinian farmers and the depth of dependency Palestinian agriculture faces.

Contribution

My research builds on previous works by highlighting the many varied ways the Palestinian and Israeli economies are interconnected. My work analyzes Palestinian agricultural dependence on Israel in light of the overarching Israeli-Palestinian conflict and the inability of the Palestinian National Authority to control the Palestinian agricultural sector. I emphasize the failure of development aid to lead to increased self-sufficiency and highlight how instead it prolongs Palestinian dependency. I hope to contribute to the field of political science by exploring the effect of development aid in Palestine, specifically the effect of aid on the agricultural sector.

Chapter Outline

The first part of my research focused on reading and analyzing the necessary background literature. I utilized secondary sources to help build my understanding of the conflict and situate the Israeli-Palestinian conflict within its regional and historical environment. I analyzed primary sources to add to my understanding of where the populations and governments involved see themselves in relation to the conflict and to other countries and international bodies. This helped me build my argument and generated support for my research question.

The next chapter moves on to focus on development aid to the Palestinian National Authority and their inability to control the Palestinian agricultural sector. I look at PNA and internationally funded agencies and their projects to help Palestinian farmers. I show that, far from helping further Palestinian independence and self-sufficiency, these programs serve to fund Israel and further Palestinian dependency.

The third chapter delves into Israeli control over Palestinian agriculture in greater detail. I focus specifically on agricultural inputs in this chapter. I emphasize the complete dependence of Palestine on Israel for the purchase of everything the Palestinian farmer needs to operate, from fertilizers and pesticides to plastic for greenhouses to genetically modified seeds.

The fourth chapter follows from the third but focuses on agricultural outputs and how these are also firmly under Israeli control. I look at the inability of the PNA to

market Palestinian products or export to other countries without first shipping through Israel.

CHAPTER ONE – AN OVERVIEW

“Agriculture not only gives riches to a nation, but the only riches she can call her own”

-SAMUEL JOHNSON

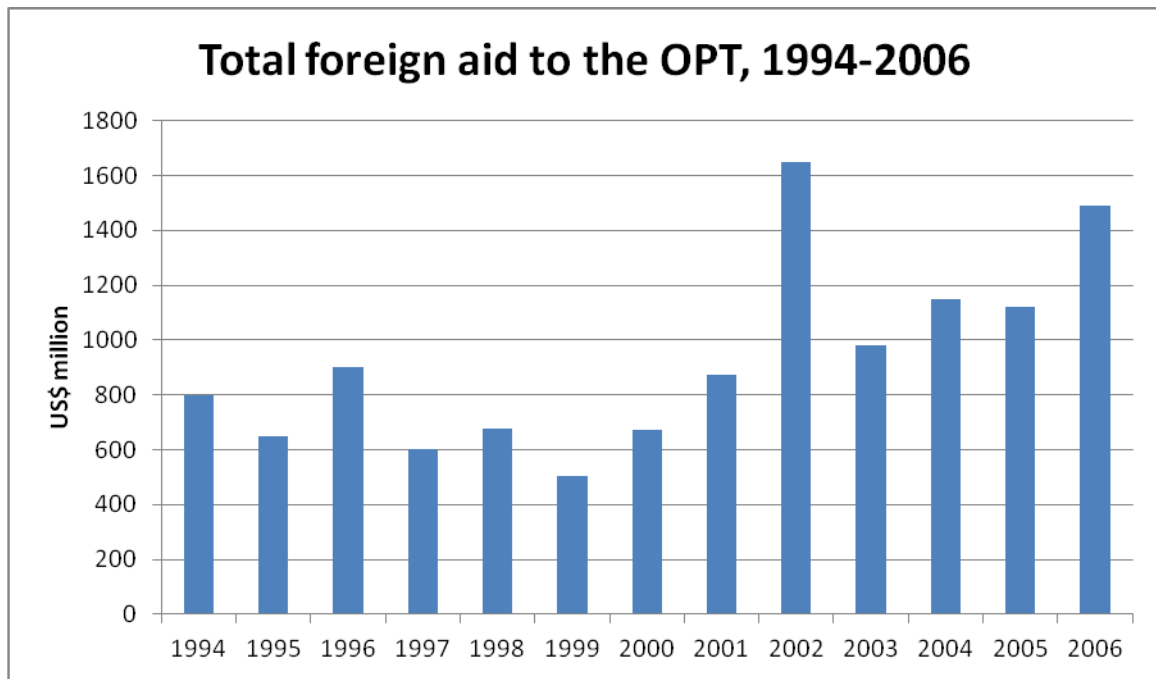
This research focuses on the failure of development aid to promote self-sufficiency in the Palestinian agricultural sector, and the resulting dependency that this failure creates. This necessitates both a discussion of agriculture in broad form and an analysis of the many necessary factors in the successful implementation of agricultural practices. I will cover a number of these factors, but will focus particularly on water and land, two resources dwindling due to Israeli confiscation. Dr. Sharif Elmusa discusses what he terms the ‘land-water nexus’ saying, “at more than one phase of the protracted conflict, the competition for the two resources was intertwined and control of one resource abetted the control of the other.”¹ Land and water are inextricably linked and the battle over their control continues between Israel and Palestine. The issues of land and water rights have proven to be major sticking points negotiating a resolution to the Palestinian-Israeli conflict. They are pushed aside as final status issues to be discussed at an unidentified future time. Meanwhile, Israel continues to confiscate land and use a disproportionate amount of the water resources while Palestinians suffer from one of the lowest water per capita rates in the world.

Land confiscation and water shortage along the Jordan River have forced Palestinian farmers to become increasingly dependent on Israel for agriculture. This has

¹ Sharif S. Elmusa. *Water Conflict: Economics, Politics, Law and Palestinian-Israeli Water Resources*. (Washington, D.C.: Institute for Palestine Studies, 1997), 216.

led to a shift in the traditional way of life for Palestinian farmers and to their further integration into the Israeli system. Palestinian farmers do not lose their land and water and then turn to self-sufficient Palestinian industry; rather, they continue farming in whatever way they can, further entangling their livelihoods and the agricultural sector into their occupier's system. This research looks at the extreme interconnectedness of the Israeli and Palestinian agricultural sectors. It emphasizes the failure of development aid to promote Palestinian government control over this sector.

The main objective of this research is to analyze the impact of development aid on the Palestinian agricultural sector and the ability of the PNA to control Palestinian agricultural production. Table 1.1 highlights the incredible amount of aid Palestine has received over the years 1994-2006. One can see the jump in aid from the Oslo period to the post-2000-*intifada* period.



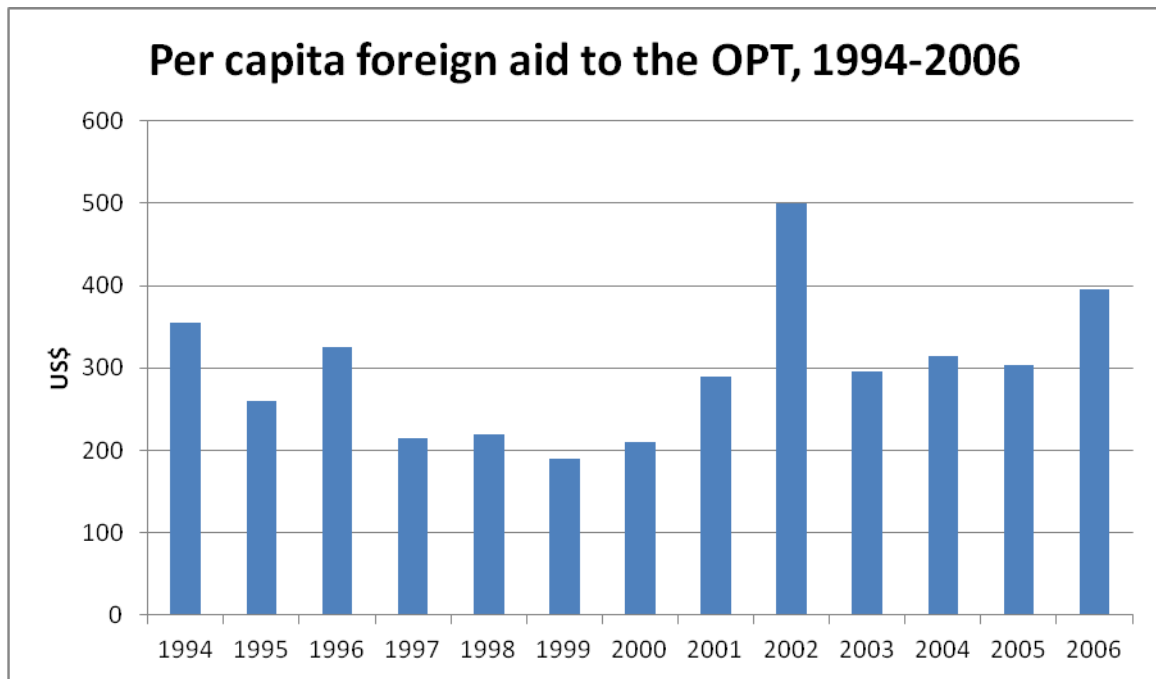


Table 1.1 – Foreign Aid to the OPT. Source: World Bank Data²

Palestinian farmers have become heavily dependent on international aid to buy agricultural inputs from Israel and are left at the mercy of Israeli markets. I argue that making Palestinian agriculture dependent on Israel is not only morally wrong but a hindrance in the battle for peace and a stumbling block on the path toward Palestinian self-sufficiency.

Origins of Conflict

To understand the current situation facing Palestinian agriculture, one must reflect on Palestine before the state of Israel was created. Agriculture was traditionally an important part of Palestinian life. Many Palestinians had strong ties to the land with the majority of the Palestinian population living in rural areas. Palestine had operated as an

² Shir Hever. *The Political Economy of Israel's Occupation: Repression beyond Exploitation*. (New York: Pluto Press, 2010), 29.

agricultural land for hundreds of years under Ottoman rule and later under British rule. Palestinians were utilizing the land necessary for their survival when Jewish immigration to Palestine began.

Jewish immigration en masse stemmed largely from the emergence of Zionism. Zionist ideology developed over the course of the 19th century in response to the various nationalist movements taking place throughout Europe. Zionism is an ideology based in the belief that the Jewish people should have a national homeland in territory under Jewish control. This was in part a response to the continuing discrimination Jews experienced living in Diaspora.

Many diverse branches of Zionism now exist but during Israel's early formative years Labor Zionism was the dominant ideological discourse. This branch of Zionism emphasized the Jewish man as a strong and proud land owner working his crops and in control of his own destiny. This early linking of Zionism and state formation to the issue of agriculture has proven influential in the development of Israeli agricultural policies.

Israel's existence has always been controversial. Jewish immigration to Palestine began in earnest around the 1920s. Jewish immigration largely coincides with the period of the British Mandate over Palestine. After World War I, France and Britain divided the remaining non-colonized areas of the world into mandates. These were areas under the tutelage and guidance of Britain and France but in reality were little more than colonies. The British and French mandates were endorsed by the fledgling League of Nations,

precursor to the current United Nations.³ Britain and France divided Palestine into separate spheres of influence. France oversaw what is now modern day Lebanon and Syria. Britain maintained control over the rest of Palestine, the newly created Jordanian state, and Iraq. Jerusalem was deemed an international area.

British foreign policy in the region often conflicted with itself. The Hussein-McMahon Correspondence of 1915-1916 between the Sharif of Mecca, Hussein bin Ali and the British High Commissioner to Egypt, Sir Henry McMahon, led to different understandings and interpretations of the agreement on both sides.⁴ The Arab leaders saw the agreement as a British promise to allow Arab self-rule in all of the Arab territories in return for an Arab revolt against Ottoman control. However, the Sykes-Picot Agreement of 1917 revealed that Britain and France were planning to divide much of the Arab territory between themselves.⁵

In 1917 Britain signed the Balfour Declaration, thus formally endorsing a Jewish national homeland in Palestine.⁶ The idea of self-rule for Arabs in Arab lands and the idea of a Jewish homeland in what was a predominately Arab region seemed antithetical. Jewish immigration came in waves. Throughout the pre-state period Israel's population grew rapidly. At first the Palestinian population did not react negatively to Jewish immigration but as it continued to increase the Palestinian inhabitants became concerned.

³ "British Mandate for Palestine" *The American Journal of International Law* 17, no. 3 (1923): 164.

⁴ Aouni Bey Abdul Hadi. "The Balfour Declaration" *Annals of the American Academy of Political and Social Science* vol. 164. (1932): 13.

⁵ Maxime Rodinson. *Israel: A Colonial-Settler State?* (New York: Pathfinder Press, 1973), 45-46.

⁶ Rodinson, 44.

Britain attempted to balance its commitment to a Jewish homeland with the rising worries of the Palestinian residents. Small skirmishes broke out between Jewish immigrants and local Palestinians. The British government issued a White Paper in 1939 limiting the number of Jews allowed to immigrate to Palestine.⁷ This was not enough to stave off conflict and outbreaks of violence continued, both between Jewish immigrants and Palestinian residents and between these two groups and British authorities.

With the outbreak of World War II and the systemic murder of six million Jews in Europe, the number of Jewish immigrants fleeing to Palestine increased. The Jewish community in Palestine was largely led by Ashkenazi Jews from Europe with many adhering to Labor Zionist ideals and socialist beliefs. Some institutions founded during this pre-state period have morphed and can be seen in current Israeli organizations. For example, the Haganah was a Jewish paramilitary organization founded during the British mandate to protect Jewish immigrants in Palestine.⁸ This organization proved to be the precursor to the modern day Israel Defense Forces (IDF).

Jewish immigration in Palestine did not take place haphazardly. Many Zionist ideologues gave a great deal of thought to the borders of a potential Jewish state. The development of agriculture and water resources were some of the many factors influencing Jewish planning on border issues. Proposals by the Zionist Organization in 1919 suggested that the future state of Israel should ensure its control over the headwaters

⁷ Rodinson, 55.

⁸ Rodinson, 63.

of the Jordan River and also part of the Litani River in Lebanon.⁹ Control of adequate water resources in an arid region is essential, especially for a society so deeply rooted in a return to the land and the development of agriculture.

After World War II, Britain found itself in a fragile position regarding its vast colonial empire. The U.K. had been substantially weakened and financially strained by the war but maintained a tenuous grasp on its colonies. Rebellions and unrest throughout many colonies, both during and after the war, taxed the already overburdened strength of the British military. Palestine was no exception. The Arab Revolt took place between 1936 and 1939 against the British mandate government in Palestine and against their policy of allowing Jewish immigration.¹⁰ The Irgun and Lehi (Stern Gang), Jewish paramilitary groups, also organized terrorist activities aimed at coercing Britain to relinquish its control over Palestine.¹¹

The United Nations, founded in 1945, inherited responsibility for the issue of Palestine from the U.K. It decided in UN General Assembly Resolution 181 on November 29, 1947 to establish a Jewish state in part of mandate Palestine and a Palestinian state in the rest.¹² Map 1.1 shows the United Nations Partition Plan and the amount and location of land allotted to both sides.

⁹ Sharif S. Elmusa. "The Land-Water Nexus in the Israeli-Palestinian Conflict" *Journal of Palestine Studies* 25, no. 3. (1996): 70.

¹⁰ Rodinson, 17.

¹¹ Rodinson, 63.

¹² Rodinson, 66.



Map 1.1 – UN Resolution 181 Partition Plan. Source: ARIJ¹³

¹³<http://www.arij.org/images/stories/pictures/maps/UN%20security%20council%20resolution%20181%20of>

The borders of the proposed Jewish state were not ideal for Jewish leaders, in that they did not include control over the headwaters of the Jordan River; however, leaders at the time were quick to accept this proposed Jewish state. Palestinian leadership had been destroyed during the Arab Revolt but what was left was adamantly opposed to partitioning Palestine.¹⁴

Lebanon gained its independence from France in 1943 and Syria in 1946. Egypt gained independence from Britain in 1922 and Jordan was released from the British mandate in 1946. These relatively new Arab states did not agree with the United Nations resolution or the partitioning of Palestine. Once the British Mandate in Palestine ended, Israel declared statehood on May 14, 1948. The surrounding Arab states invaded and were defeated by Jewish forces, thus leading to Israeli control over 78 percent of mandate Palestine, 1/3 more than was allotted to the Jewish state in the UN partition plan.¹⁵ Egypt gained control of the Gaza strip and Jordan control of the West Bank.

This event is viewed differently by Israelis and Palestinians. For Israelis this was the War of Independence and with it came the fulfillment of the Zionist ideal of a Jewish national homeland. For the Palestinian population this was the *Nakba* (catastrophe).¹⁶ Many Palestinian residents fled their homes; others were forced to leave by Israeli troops. This began the Palestinian refugee crisis still facing the world today when

or%20partition%20plan%20of%20Palestine,%201947.jpg.

¹⁴ Rodinson, 18.

¹⁵ Sara Roy. *Failing Peace: Gaza and the Palestinian-Israeli Conflict*. (New York: Pluto Press, 2007), 322.

¹⁶ Neve Gordon. *Israel's Occupation*. (Berkeley: University of California Press, 2008), xix.

“approximately seven hundred and fifty thousand Palestinians (out of a population of nine hundred thousand in the region that become Israel) either were forcefully expelled or fled across international borders.”¹⁷ While the 1948 Arab-Israeli War increased the amount of territory comprising Israel, it did not drastically change Israeli control over water resources.

The 1948 War also signaled the beginning of international aid to the Palestinians. “The main source of aid to the Palestinians until the 1990s was the UN Relief and Works Agency (UNRWA), the UN agency for refugees. UNRWA maintained refugee camps for Palestinian refugees who had been forcefully expelled from their homes in the war of 1948, providing them with shelter, food, and education.”¹⁸ While certainly well intended and providing much needed relief to countless numbers of refugees the agency also had many critics. “UNRWA has been the target of criticism that it was effectively helping the Israelis manage the occupied Palestinian population, or that the camps should be dismantled and Israel left responsible for the well-being of the refugees.”¹⁹ Under international law Israel, as the occupying power, was responsible for the well-being of Palestinians and many felt that the UNRWA presence absolved Israel of this responsibility and was a tacit endorsement of the occupation.

Tensions continued to mount between Israel and its Arab neighbors over a number of issues. Border skirmishes, an Israeli military strike into Syrian territory, and

¹⁷ Gordon, 5.

¹⁸ Hever, 21.

¹⁹ Hever, 21.

the 1956 Suez Crisis were some of the many factors leading to the outbreak of the June 5-10, 1967 Six Day War. The Soviet Union gave Egypt information that implied Israel was planning to attack Syria. This led Egypt's President Nasser to move Egyptian troops into the Sinai and to close the Straits of Tiran, thus preventing Israeli access to the Red Sea. This in turn led Israel to launch a surprise attack, quickly destroying Egypt's air force and in a few days soundly defeating the Arab countries. As a result Israel gained control of the Gaza Strip and the Sinai Peninsula from Egypt, the West Bank and East Jerusalem from Jordan, and the Golan Heights from Syria.

A major result of the 1967 Six Day War was that Israel expanded control over all of mandate Palestine and additional territory taken from Egypt and Syria during the war. Israel also came to be in command of the headwaters of the Jordan River and was now in a position to fully control the water resources of the region.

International aid to Palestine remained predominantly in the hands of the UNRWA during this time period. "When Israel occupied these areas in 1967, UNRWA stayed behind and continued to manage the refugee camps."²⁰ Donors were hesitant to invest in Palestine with international law deeming Palestinian development and care an Israeli responsibility. "Providing aid under occupation would have been (correctly) perceived as indirect aid to the occupying power, Israel, since Israel was responsible for the Palestinian economy. Any donors taking on a part of that burden would be helping Israel maintain the minimum living standards of the Palestinians under occupation."²¹ For

²⁰ Hever, 21.

²¹ Hever, 21.

this reason, aid continued to be provided under the auspices of the UN through the UNRWA.

Beneath the West Bank there exist three main aquifers that Israel had used in part before 1948 and gained complete control over during this war. Israel was now in a very powerful position vis-à-vis water resources. “About 60 percent of the groundwater in Israel²² originates outside the 1967 borders, namely, in Lebanon, the Golan Heights, the Yarmuk, and the Judean and Samarian hills (West Bank). The highland aquifer in the Judean and Samarian hills alone provides 40 percent of Israel’s total water potential, not counting recycled water and floodwater, and this is of great geopolitical significance.”²³ Israel came to be in complete control over the water resources in the region owing to the results of the 1967 war. This had an incredible impact on the development of Israeli agriculture and the fate of Palestine’s.

The Bigger Picture

The continued reliance of Palestinians on permission from Israel to utilize shared natural resources and the use of international development aid to harness these resources entail consequences for the overall Israeli-Palestinian conflict. Jeff Halper argues that a ‘matrix of control’ has developed in which Israel is able to turn over administrative and bureaucratic tasks to Palestinian leaders and organizations without actually giving up control. “Since 1967 Israel has laid a matrix of control over the West Bank, East

²² Soffer, an Israeli geographer, shows extreme bias here in his decision to phrase this sentence in such a way as to make it seem like this groundwater is Israeli when in fact it is not.

²³ Arnon Soffer. *Rivers of Fire; the Conflict over Water in the Middle East*. (Lanham: Rowman and Littlefield Publishers, Inc., 1999), 141.

Jerusalem and Gaza. Because the matrix operates by control and not by conquest, it enables Israel to offer a generous 94 percent of the West Bank, creating the illusion of a just and viable settlement.”²⁴ Palestinian agriculture has been heavily impacted by this ‘matrix of control’ as virtually all aspects of agricultural production depend on Israel.

Literature Review

A great deal of literature covers the issues of development aid and land/water confiscation. Many authors have tackled the issues of aid failure and Palestinian dependency. Some of these works have proven informative and useful in my examination of Israeli control over the Palestinian agricultural sector.

Despite Good Intentions; Why Development Assistance to the Third World has Failed by Thomas W. Dichter offers an analysis of the development community. Dichter highlights each chapter with a story reflecting an aspect of development aid that points to the many failures and inconsistencies of aid. Dichter concludes that international development aid should be greatly reduced and that there are virtually no examples of successful aid projects in the long run. I agree with much of Dichter’s analysis and when applied to the case of Israel-Palestine it allows for much insight. The structure of international aid agencies and the donor preference for timely results leads to development aid projects with specific time frames. None of the Western countries developed in 3-5 year increments and it is unrealistic to expect Palestine and the other developing nations to change this rapidly. I believe the author leaves out an analysis of

²⁴ Jeff Halper, “The 94 Percent Solution: A Matrix of Control,” *Middle East Report*, no. 216 (2000): 15.

the potential consequences if development aid was not given. While difficult to measure, it would have been an interesting point and made his overall analysis stronger.

A Very Political Economy; Peacebuilding and Foreign Aid in the West Bank and Gaza by Rex Brynen delves into the specific situation of aid in the Israeli-Palestinian case. Brynen focuses on the Oslo years up until 1999. Brynen's analysis differs from many that I have encountered in that it not only gave the motives for the Palestinian side but also shows the factors leading up to and enabling Israeli decisions. Many books, depending on their political slant, will highlight one perspective while ignoring the others. The author does an excellent job including the rationales and motives of both parties. Brynen, like Dichter, points to a number of problems with aid, from the discrepancies between amounts pledged and actual allocations, to the structural difficulties within Israel and Palestine that make aid ineffectual. Brynen however, argues that while often misused and at times wasteful, aid served a very important purpose in the Palestinian case and shows that the fledgling Palestinian Authority was unlikely to have survived the Oslo years without massive amounts of assistance from the international community.

The Political Economy of Israel's Occupation: Repression Beyond Exploitation by Shir Hever attempts to calculate the costs of Israel's occupation and argues that it is becoming more costly to maintain security in the region as the occupation continues. Hever's discussion of international aid is particularly useful for my work as he points to the numerous contradictions and benefits that aid provides. Hever argues that as a belligerent occupying power, Israel is legally obliged to provide for the welfare of the

Palestinians under its rule. However, by allowing and encouraging the international community to take over this responsibility Israel is able to cut its own costs and the international community validates Israel's shirking of its responsibilities. Hever points out that Palestinian life would be much worse off without the presence of international aid but a situation has developed in which the Palestinian economy has become totally reliant on international aid for survival and Israel is able to distance itself from the failures of the Palestinian economy without acknowledging the role the occupation has played and continues to play in the destruction of the Palestinian economy.

Water Conflict; Economics, Politics, Law and Palestinian-Israeli Water

Resources by Sharif S. Elmusa offers an appraisal of the water situation along the Jordan River and highlights the links between water and land in the conflict. Elmusa presents the reader with a history of the Arab-Israeli conflict as it relates to water issues and details developments along this front in recent years. This book was published in 1997 and discusses the different water sharing agreements which were part of the Oslo Accords signed in 1993. Elmusa argues that Israel is in a predominately powerful position to control the flow of water resources but that it is in the region's best interests to develop a more equitable system of water allotment.

"Water and International Conflict" by Helga Haftendorn in *Third World*

Quarterly seeks to explain the differences in water conflicts and the ways in which settlements to these conflicts can be achieved. Haftendorn uses many examples of water systems throughout the world to highlight different forms of water conflict and she emphasizes the importance of the setting in which these conflicts take place. The author

argues for the need to shift conflicts to a more symmetrical basis where the upper riparian countries would have less of an incentive to dominate water resources. Haftendorn also assesses the role of international institutions in resolving water conflicts. She finds that water conflicts lend themselves to creating international institutions but these are usually only moderately successful when targeted at specific conflicts or regions. International institutions that seek to maintain more global dictates regarding water sharing are considerably less effective, though the author thinks they serve as a good basis for further outgrowth.

“The Jordan-Israel Water Agreement: A Model or an Exception” and “The Land-Water Nexus in the Israeli-Palestinian Conflict” both by Sharif S. Elmusa in the *Journal of Palestine Studies* offer analyses of the water situation in the Jordan River Basin. “The Jordan-Israel Water Agreement” discusses the peace treaty between these two countries and the water sharing agreements that they signed. Elmusa argues that by making the Jordan River the object of bilateral negotiations instead of dealing with the river as a unit, as international law requires, a dangerous precedent has been set. Israel controls the headwaters of the Jordan River and is in a much more powerful position vis-à-vis its neighbors. The sharing agreement between Israel and Jordan largely provided excess water that was not being utilized by Israel. This would be a major problem in negotiations with Palestinians as the Palestinians are the downstream party and Israel would have to adjust its current usage to fairly allocate water for the Palestinians, something Israel is highly unlikely to do. “The Land-Water Nexus” emphasizes that land is at the core of the conflict and that land and water are inseparable. Elmusa gives a historical overview and

challenges the idea of a hydrological imperative behind Israel's wars with its neighbors. He points out the importance of water in Zionist thinking and notes that if one is allowed to design their own state than certainly they would design one with the best possible borders, in Israel's case, one including control of the region's water resources. Elmusa points out the 'security paradox' in which Israel retains control of the land and water resources of the West Bank in what they see as protection of their security interests and in this way perpetuate the occupation. This can only further the security threat to Israel that is posed by an angry population consistently denied their rights and control over of their own future.

Israel: A Colonial-Settler State by Maxime Rodinson was a timely piece arguing that Zionism is an inherently colonial ideology and concluding that Israel is a colonial-settler state. The book was written by a French scholar around the outbreak of the 1967 War which helped highlight the accuracy of his claims. Rodinson gives a history of the birth of the state of Israel and emphasizes along the way how this development lines up with the dominant colonial mindset of the time. Rodinson acknowledges that Israel is a unique case and its methods of colonization differed from those of France or Britain but concludes that Zionism, and the idea of settling people on a land already inhabited by another people and forming a national homeland there, easily falls within the settler-colonial framework.

Israel's Occupation by Neve Gordon offers an in-depth look at Israel's forms of control and argues that the excesses and contradictions these forms of control create shift the ways Israelis and Palestinians react to one another. Gordon looks at the structures of

the occupation and argues that these are more important than the actual decisions being made. From this perspective Gordon views the Oslo accords as an “outsourcing of the occupation” that served to further Israeli control over the Palestinians but with Palestinian and international approval. Gordon discusses the military government and its rule over the West Bank and Gaza strip and also notes how this control has affected the Palestinian agricultural sector. Gordon offers an interesting theoretical viewpoint from which to view the occupation, similar to that of Selby’s, and argues that there has not been a shift in the means of Israeli control but rather a shift in the way these means of control operate.

Failing Peace: Gaza and the Palestinian-Israeli Conflict by Sara Roy is a compilation of Roy’s considerable work detailing the occupation’s affects on the West Bank and specifically on the Gaza Strip. Roy postulates the theory of de-development in which the Palestinian economy is damaged and structured in such a way as to allow no real economic growth. The Palestinian economy is heavily reliant upon international aid and Israel’s complete control over the borders and inputs/outputs leaves the Palestinian economy crippled and unable to recover. Roy highlights the impact of the Israeli closure policy and the massive unemployment and economic crisis this has caused. She also points to the failures of Oslo to create viable Palestinian institutions while the basic structure of Israeli control remained in place. Massive amounts of foreign aid were poured into development projects during the Oslo period but this aid was misguided as the Palestinian economy was in such a dependent state and structured in such a way that real development was impossible. Any development during this period was lost with the massive destruction that took place during the 2000 *Intifada*. Roy argues that Israel’s

unilateral withdrawal from Gaza was an economic disaster. The withdrawal allowed Israel to hand off responsibility for the Gazans' well-being while the closure and walling off of Gaza created a situation in which the economy was unable to grow and develop. Roy offers an incredible amount of data and fieldwork from her time in Palestine and analyzes the position of Islamism in Gaza. She emphasizes Islamist groups' popularity in light of their ability to provide social services such as health care and education that the Palestinian Authority and Israel do not or are unable to provide. Roy discusses the impact closure and Israeli occupation had on Palestinian agriculture and the shifts in agricultural production which have taken place due to the closure policy.

Hollow Land: Israel's Architecture of Occupation by Eyal Weizman discusses the shape of Israel's occupation from a spatial point of view. Weizman discusses the vertical layers of the occupation with Israeli control of the land and air space and the increasingly subterranean use of space by the Palestinians. He discusses the structures and technologies of occupation that allow Israel to maintain control of the Occupied Palestinian Territories, from roofing laws in Jerusalem to military outposts throughout the West Bank. Weizman argues that oftentimes invocation of the 'public good' is used to justify Israeli land acquisition when in fact this always means the taking of the Palestinian public's land for the Israeli public's good. Weizman discusses the shift that took place in Israeli policy from an emphasis on supporting and improving agricultural production in Palestine in order to make the occupation less visible to actively taking land and damaging Palestinian agriculture. Weizman, like Selby, Gordon, and Roy all emphasize the structures of control that Israel has in place which allow the continuation

of the occupation and allow Israel to hand its responsibly for the welfare of the Palestinian people to the international community or to a disempowered Palestinian government without control of its territory or resources.

My research follows from the concept that water and land are tied together and water shortage and land confiscation will necessarily affect one another. Copious amounts of aid have been poured into Palestine in an effort to promote development of Palestine's existing land and water resources. However, this aid money necessarily enters the Israeli economy thus perpetuating the interconnectedness of the two economies and furthering the dependency of Palestinian agriculture on the Israeli structure. Palestinian agriculture cannot be separated from this 'land-water nexus'. I will analyze the structures of Israeli control over Palestinian agriculture and the failure of development aid to promote Palestinian self-sufficiency and independence.

CHAPTER TWO – THE PALESTINIAN NATIONAL AUTHORITY

Perhaps one of the most important contradictions in the context of this book is Israel's welcoming of international aid to the occupied Palestinians, in order to relieve Israel of the need to take responsibility for the Palestinians' living conditions, while at the same time Israel erects obstacles to aid, harasses aid agencies, puts certain Palestinian areas under blockade, and thus prevents the aid from reaching its target.

-SHIR HEVER, The Political Economy of Israel's Occupation

This chapter focuses on the attempts of the Palestinian National Authority to govern Palestine without full territorial control or many of the advantages of sovereign nationhood. This chapter then explores how development aid given to Palestine fails to encourage self-reliance and further entrenches Israeli domination. The PNA has limited power and its ability to influence Palestinian affairs is contingent upon Israeli cooperation. However, the PNA often behaves as if it had control over the agricultural sector and it has formed a number of organizations dedicated to developing domestic agriculture.

These initiatives share some important features. They receive a great deal of international funding. They seek to document the ever-changing face of Israeli occupation in the Palestinian Territories. Most importantly, they embrace investment in Palestine's agricultural sector as a path toward Palestinian self-sufficiency. This chapter will offer a brief history of the PNA and look at some of the organizations that have been created. It will also address two of the agricultural projects underway and emphasize the lack of control the PNA has over the agricultural sector and the drawbacks of donor investment in this sector.

Palestinian National Authority Background

The Palestinian National Authority (PNA) was formed after the signing of the Gaza-Jericho Agreement in 1994 as had been stipulated by the earlier Oslo Accords.²⁵ The Accords represented the first face-to-face negotiations between the Palestinian Liberation Organization (PLO) and the Israeli government. A Palestinian delegation under PLO Chairman Yasser Arafat met and negotiated with an Israeli delegation under Prime Minister Yitzhak Rabin. The PNA was created as a transitional authority to rule during the next five years while a final status agreement was being negotiated. As of today, no final status agreement has materialized and the PNA remains the governing body of Palestine.

The Oslo Accords dealt with many issues standing between the parties and a two-state solution, such as water, territory and security. Talks between the two parties began in Madrid, Spain in 1991 and continued in secret in Oslo, Norway. The Accords were signed September 13, 1993 in Washington D.C. and the now iconic picture of a jovial President Clinton looking on as Rabin and Arafat shake hands ushered in a hopeful decade for both sides, and the belief that peace was achievable and inevitable. The Accords provided a framework both parties could follow in the pursuit of a final status agreement. Certain issues such as the fate of Jerusalem, eventual borders, Palestinian refugees, Israeli settlements, security concerns and water rights were left to be discussed at a later date.

²⁵ Officially, the Declaration of Principles on Interim Self-Government Arrangements or Declaration of Principles (DOP)

The Accords divided Palestine into different administrative areas. These areas are still roughly the same today and are extremely important to take into consideration when looking at PNA areas of influence. Area A (17% of the West Bank) was given over to Palestinian control with the PNA being responsible for security and civil matters in these areas. Area B (24% of the West Bank) was under Palestinian civil control but Israeli military control, and Area C (59% of the West Bank) was under complete Israeli civil and military control. Area A is predominantly composed of large Palestinian urban centers, Area B of rural Palestinian locations, and Area C of Israeli settlements in the West Bank, bypass roads, and the Jordan River Valley. “According to the geopolitical classification of the Palestinian lands in the West Bank, 62.9% of the agricultural lands (arable lands, mixed holdings, permanent crops and greenhouses) are located in Area “C”, 18.8% in Area “B” and 18.3% in Area “A”.”²⁶ Thus, the majority of Palestinian agricultural land is located in areas entirely outside of PNA control, while only Area A is Palestinian controlled, though still subjected to the economic domination and restrictions of occupation.

The PNA has been able to develop a certain amount of infrastructure and an approximation of the organs of government, though they are only able to deal with internal matters while Israel maintains control over external security issues and foreign affairs. The PNA consists of legislative, executive, and judicial branches. The legislative branch, the Palestinian Legislative Council (PLC), has generally been dominated by the

²⁶ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 10.

Fatah party of Yasser Arafat and the PLO. However, in 2006 Hamas won legislative elections and took over from Fatah as the ruling party in the PLC. This Hamas victory led to a cut in PNA funding and to vicious internal rifts in the PNA. A brief coalition government was formed but was short lived after armed confrontation led to Hamas seizing control over the Gaza Strip. Fatah regained control of the PNA and dominates in the West Bank and once again is the recipient of international recognition and aid.

Palestinian National Authority Funding

Due to the occupied status of Palestine and the highly contentious nature of the situation in the region, the PNA has received extraordinary amounts of outside funding. The Oslo Accords fundamentally changed the vantage point of potential donors. Before the accords, the majority of aid was being provided through the UNRWA, which was heavily criticized for helping Israel shirk its responsibilities. The Oslo Accords gave donors a legal partner to interact with and funding began pouring into the territories. "Aid was offered as a boon to the Palestinians and to Israel for their willingness to make peace. Donors assumed that Israel's eventual withdrawal from the OPT would leave the Palestinians unprepared to sustain themselves economically after decades of occupation."²⁷ Here one must make a distinction between development aid and humanitarian aid. This research is highly critical of development aid as a means for promoting Palestinian self-sufficiency. Humanitarian aid however, is invaluable in times of crisis and often addresses a very real need in Palestine.

²⁷ Hever, 22.

Development aid in Palestinian agriculture fails in several ways. It does not create self-sufficient Palestinian structures, institutions, or practices. Rather, it creates a system of entrenched dependency on Israel. The institutions of Palestinian agriculture are at best middle-men dealing with the Israeli authorities to supply farmers with agricultural inputs or to facilitate farmers selling agricultural outputs. Water companies, electric companies, and all the input supplies in Palestine are in no way independent of or immune to Israeli control, as will be further described in chapter three. This control gives Israel access to additional revenue, and enables it to control the flow of Palestinian goods into the Israeli market at the expense of Palestinian farmers, something which will be discussed further in chapter four. While some Palestinians in the bureaucratic elite have benefited from this system, it has hugely detrimental effects on Palestinian agriculture. Development aid buttresses this system and helps maintain this Palestinian bureaucracy, while doing nothing to create self-sufficiency or autonomy. As will be detailed in later chapters, rather than encouraging autonomy, this development aid further economically entangles Palestine in a colonial-settler system and further limits the possibility of Palestinian independence.

	1992 (\$ millions)	1993 (\$ millions)
Bilateral Donors	42.4	138.7
Italy	6.0	23.7
United States	18.6	19.6
Germany	0.3	16.1
Japan	1.1	14.8

Sweden	4.5	12.1
Netherlands	1.5	7.8
France	2.0	6.5
Norway	2.9	5.2
Others (Australian, Austria, Belgium, Canada, Denmark, Finland, Greece, Ireland, Kuwait, Libya, Malaysia, Saudi Arabia, Spain, Switzerland, United Kingdom)	5.5	33.2
Multilateral Donors	15.3	75.5
European Union	12.0	63.2
Arab Fund for Economic and Social Development	1.4	9.3
Others	1.9	3.0
Multilateral Agencies	116.2	48.6
UNRWA	109.2	37.4
UNDP	5.2	4.1
Others (FAO, IFAD, ILO, UNCDF, UNCTAD, UNESCO, UNFPA, UNICEF, UNIFEM, WHO)	1.8	7.1
Total	173.9	262.8

Table 2.1 – UNDP Estimates of Donor Assistance to the West Bank and Gaza (1992-93). Sources: UNDP, *1993 Compendium of External Assistance to the Occupied Palestinian Territories* (Jerusalem: UNDP, July 1993); and UNDP, *1994 Compendium of External Assistance to the Occupied Palestinian Territories* (Jerusalem: UNDP, August 1994).²⁸

²⁸ Rex Brynen. *A Very Political Economy; Peacebuilding and Foreign Aid in the West Bank and Gaza*. (Washington D.C.: United States Institute for Peace Press, 2000), 46.

Foreign aid to the PNA is predominantly from the United States, European donors, and multilateral agencies and organizations. Table 2.1 shows the amounts of aid from top donors for the years 1992 and 1993. One can see the substantial jump in aid that took place with the signing of the Oslo Accords.

Without the benefit of being an actual state, the PNA attempts to function as if it were one and relies on these external sources of funding for its survival. This makes the PNA extremely vulnerable to outside pressure. As the U.S. has shown numerous times, it will stop its flow of aid in order to influence the situation in Palestine and to put pressure on the PNA, as with the Hamas election in 2006. Roughly a third of the PNA's budget comes from tax revenue collected by the Israeli government. "At the ports, Palestinian importers are required to pay the Israeli authorities the value-added tax of 17%, as well as whatever custom taxes are due on goods that come in on their way to the West Bank or Gaza. These transactions (along with direct Palestinian transactions with Israeli firms and merchants) last year [2006] yielded revenues of \$711 million."²⁹ The PNA is intentionally excluded from the tax collection process and is very reliant on the Israeli government to continue the flow of tax revenue. *Haaretz* reporter Amira Hass argues, "These tax receipts are not donations of goodwill from Israel; they are not charity. This is not like, say, Dutch foreign aid money, which is given freely by the Dutch people and can be withheld if the Dutch choose to stop giving it. These are tax revenues that are due to the people in the territories where the goods are headed, and the Israelis have no right to

²⁹ Amira Hass, "Palestinians Are Being Robbed by Israel" *Haaretz*, 2/28/06. Accessed on 11/15/2011. <http://ifamericaknew.org/stats/robbed.html>.

hold them up.”³⁰ This forced reliance makes the PNA also very susceptible to Israeli pressure as they can withhold funds at their discretion.

The PNA and the Palestinian Agricultural Sector

The PNA has created a ministerial structure with governing and regulating bodies such as the Ministry of Health, Ministry of Education, Ministry of Labor and Ministry of Agriculture (MoA). The MoA is responsible for working to improve and regulate the Palestinian agricultural sector. The MoA works to improve access to land, water, and improved farming techniques. The Palestinian Central Bureau of Statistics (PCBS) is a PNA organization that works with the MoA to gather agricultural data and publish statistics. The PNA claims to have some measure of control over the Palestinian agricultural sector. It devotes considerable funds to maintaining and developing agricultural capacity and in expanding agricultural production in an effort to increase Palestinian self-sufficiency.

While the PNA does have a limited amount of authority and can engage in many beneficial projects in other sectors, it has very little control over the Palestinian agricultural sector. As will be shown, money given to agricultural organizations and programs, far from helping increase Palestinian self-sufficiency, not only benefits Israel overall but more importantly contributes to Palestine’s continued dependence on and interconnectedness with Israel.

³⁰ Amira Hass, “Palestinians Are Being Robbed by Israel” *Haaretz*, 2/28/06. Accessed on 11/15/2011. <http://ifamericaknew.org/stats/robbed.html>.

Agricultural Organizations

The majority of agricultural organizations working in Palestine are non-governmental organizations (NGOs) funded by international donors. These groups may receive money from international donations funneled through the PNA for agricultural purposes or directly from outside donors themselves. There are numerous agricultural organizations dedicated to improving technical and scientific research, empowering local farmers, developing more sustainable practices, and a number of other agricultural development endeavors.

The Applied Research Institute – Jerusalem (ARIJ) was founded in 1990 as a Palestinian NGO based in Bethlehem. The organization's mission statement reads,

ARIJ's mission is promoting sustainable development in the occupied Palestinian territories and the self-reliance of the Palestinian people through greater control over their natural resources. ARIJ aims to assess alternative options, policies and strategies to conserve natural resources, which can be used as the basis for formulating recommendations and informing strategic decision making to improve the management of these resources and assist in their sustainability. Specifically, the institute aims to augment the local stock of scientific and technical knowledge and to introduce and devise more efficient methods of resource utilization and conservation, improved practices, and appropriate technology.³¹

ARIJ focuses on sustainable development and believes investment in the agricultural sector is necessary for Palestinian self-sufficiency.

ARIJ has four areas of focus. These are the Natural Resources Program, the Sustainable Agricultural Program, the Information Technology Program, and the Good

³¹ The Applied Research Institute – Jerusalem (ARIJ) website. Vision and Mission. Accessed 11/06/11. <http://www.arij.org/about-arij/background/vision-mission.html>.

Governance Program.³² These programs have a number of departments and run various programs aimed at promoting Palestinian self-sufficiency. ARIJ does a great deal of work compiling data and publishing reports for both PNA bodies and international organizations. ARIJ prides itself on being a source of scientific and technical knowledge and sees itself as a ‘national research institute’ that helps the PNA develop policies based on accurate and up to date scientific facts and figures. The data collected and published by ARIJ is often used by the PNA and international organizations when developing projects and proposals.

ARIJ’s headquarters are based in Bethlehem and they have several missions and offices throughout the West Bank and Gaza. I worked with ARIJ in conducting the fieldwork for this research. I was able to meet with Mr. Nader Shehadeh Hrimat, the Deputy General Director of ARIJ and head of the Agricultural Development Department. Mr. Hrimat was extremely busy but also very willing to help. He provided me with two ARIJ publications; the “Integrated Report for The Palestinian Agro-Production and Market System (Case Study of the Northeast Jordan Valley Area)” from 2010 and the “Integrated Report for Palestinian Agro-production Calendar Marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)” from 2008. In addition, Mr. Hrimat e-mailed me two presentations; one authored by himself entitled “Agro-Marketing Systems in the Jordan Valley; Constraints and Potentials” from September, 2006 and the other a presentation by the General Director of ARIJ Dr. Jad Isaac entitled “Natural Resources in the Jordan Valley; Constraints and Potentials” also

³² The Applied Research Institute – Jerusalem (ARIJ) website. Programs. Accessed 11/06/11. <http://www.arij.org/programs.html>.

from September, 2006. These publications and presentations are filled with facts, figures, and illustrations detailing almost every aspect of Palestinian agricultural production and were extremely helpful over the course of this research.

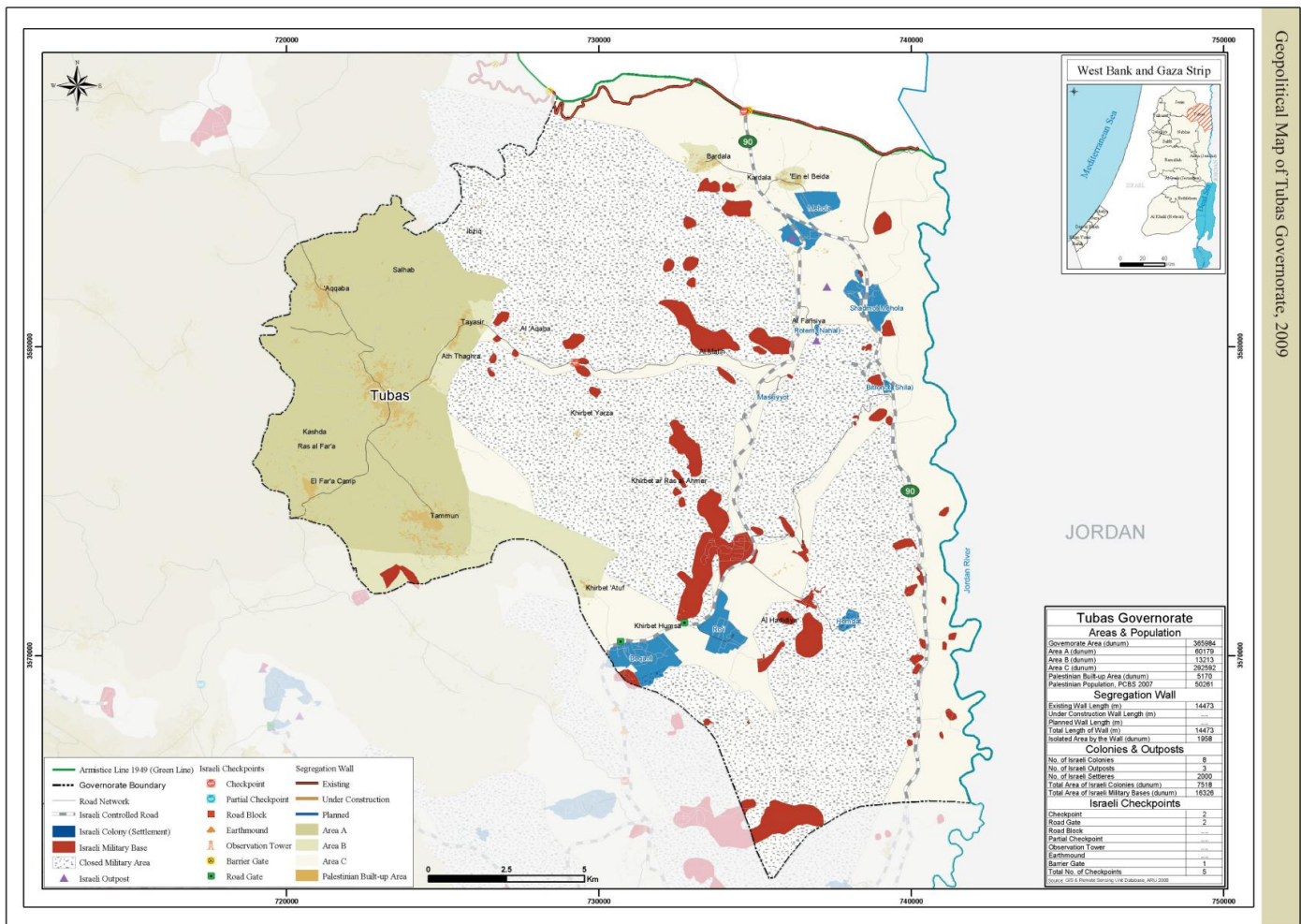
Mr. Hrimat also suggested I utilize the website, “Monitoring Israeli Colonizing Activities in the Palestinian Territories” which is a joint venture by ARIJ and the Land Research Center (LRC). The project is funded by the European Union and it seeks to monitor Israeli settlement in the West Bank and Gaza. The goal is to maintain an accurate database of Israel’s illegal settlement activity and to give this information to European and Palestinian leaders to help in policy planning decisions.³³ By monitoring land confiscations and future plans for settlement expansion this organization is able to provide detailed information regarding the loss of Palestinian territory, the monetary costs of the settlements for Palestinians and likely Israeli expansion plans. The project shows how Palestinian agricultural land is taken away by expanding Israeli settlement construction and the organization provides a number of case studies and maps to help detail the situation.

Mr. Hrimat was able to put me in touch with Mr. Feras Badran, a research associate with the Agricultural Development Department at ARIJ. Mr. Badran is a horticulture expert with a master’s degree in agricultural science. He is working on a multi-organizational project in the northeastern part of the West Bank in the Tubas Governorate called TATWEER (Progress) Livelihood Security and Civil Society

³³ Monitoring Israeli Colonization Activities in the Palestinian Territories. About the Project. Accessed on 11/06/11. http://www.poica.org/proj-objectives/proj_obj.php.

Strengthening in the Occupied Palestinian Territories. The project, funded with Australian aid, aims to help farmers improve their productivity and conducts training programs in natural resource management skills.³⁴ Mr. Badran was willing to work with me, answer my questions, and help set up interviews with Palestinian farmers. He also allowed me to view some of the actual infrastructure built in the Tubas region. Map 2.1 shows the location of this region as well as the make-up of different areas and population centers.

³⁴ The Applied Research Institute – Jerusalem (ARIJ) website. “Livelihood Security and Civil Society Strengthening in the Occupied Palestinian Territories”. Accessed 11/07/11.
<http://www.arij.org/projects/current-projects/104-livelihood-security-and-civil-society-strengthening-in-the-occupied-palestinian-territories.html>.



Map 2.1 – Tubas Governorate. Source: ARIJ ³⁵

The Agricultural Development Association (PARC) was founded in 1983 by “a group of agronomists, agricultural engineers, pioneer farmers, and vet doctors.”³⁶ The group began as a voluntary organization seeking to develop the Palestinian agricultural

³⁵ <http://www.arij.org/images/stories/pictures/maps/Tubas.jpg>.

³⁶ Agricultural Development Association (PARC) website. PARC “1983-2008” - Twenty Five Years of Institutional Development. Accessed 11/06/11. <http://www.pal-arc.org/>.

sector and provide support for Palestinian farmers. PARC is a non-profit non-governmental organization that receives most of its funding through international donors.

PARC's mission is as, "a leading Palestinian NGO working in the field of rural development, environment protection, and women empowerment. We offer technical assistance and support, along with extension services to individuals and organizations working in similar fields. In carrying out our projects and activities, we rely upon the active and broad grassroots participation of our beneficiaries, and, in process, develop our experts' capabilities and improve our employees' skills. By doing so, we aim to significantly contribute to the building of a Palestinian democratic and civil society."³⁷ PARC seeks to utilize Palestinian experts in agriculture and water to develop more sustainable methods for agriculture and to explore unique solutions to the problems facing Palestinian farmers.

I was able to meet with Mr. Thear Jalloud, the Water and Environment Projects Coordinator at the PARC headquarters in Ramallah. He helped explain some of the non-conventional programs PARC was investing in and explained why he felt it was important to invest in the Palestinian agricultural sector. I have remained in contact with Mr. Jalloud and he has proven to be an invaluable source of information regarding the current situation of agriculture in Palestine and methods presently being directed toward its improvement.

³⁷ Agricultural Development Association (PARC) website. Our Mission. Accessed 11/06/11. <http://www.pal-arc.org/mission.html>.

Holy Land Trust (HLT) was established in Bethlehem in 1998. The group is a Christian not-for-profit organization. The group's mission statement reads, "Through a commitment to the principles of nonviolence, the Holy Land Trust seeks to strengthen and empower the Palestinian community in developing spiritual, pragmatic and strategic approaches that will allow it to resist all forms of oppression and build a future that makes the Holy Land a global model and pillar of understanding, respect, justice, equality and peaceful coexistence."³⁸ The organization is involved in many areas of outreach, especially information dissemination as well as encouraging travel to the region in order for others to witness the situation firsthand. They have five main programs which include; nonviolence programs, community outreach, leadership programs, travel and encounter, and independent media.³⁹ Through their community outreach program HLT seeks to work with Palestinian communities and farmers to develop more sustainable practices and achieve greater Palestinian self-sufficiency.

I was able to meet with a group of interns working at HLT in Bethlehem. All of the full-time workers in the office were Palestinian except for one American and the interns were all from abroad. An Italian intern, Elisa Molena, had recently returned after spending a few months working in the Palestinian agricultural sector. She shared her experiences with me and was able to give me her view on international involvement in Palestine.

³⁸ Holy Land Trust website. About Us, Mission Statement. Accessed 11/06/11.
http://www.holylandtrust.org/index.php?option=com_content&task=view&id=191&Itemid=144.

³⁹ Holy Land Trust website. What We Do? Accessed 11/06/11.
http://www.holylandtrust.org/index.php?option=com_content&task=view&id=145&Itemid=340.

The Palestinian Hydrology Group (PHG) was created in 1987 and is an internationally funded Palestinian NGO focusing on water and climate related issues. The group has offices in Ramallah, Jerusalem, Nablus, Hebron, and Gaza. They engage in various activities such as advocacy, agriculture and food security, awareness and capacity building, rainwater harvesting, research, sanitation, water resources development, and water systems.⁴⁰ Through agriculture and food security projects PHG works toward improving the state of Palestinian agriculture by developing and improving water resources. They work toward achieving Palestinian food security and self-sufficiency for Palestinian agriculture. “PHG is a non-government organization [that] strives to remain the lead research and developmental organization in the water sector which contributes to the development of the capacity of water and sanitation practitioners and to the protection and development of local water and environmental resources as well as to ensure just allocation of water and sanitation services to all Palestinian Communities. PHG also strives to contribute in building a civil society and empowers the vulnerable groups, including women, to participate in decision making and to promote the good water governance and the right to water as well as to improve food security for the Palestinian Communities.”⁴¹ PHG maintains an extensive collection of maps of the Palestinian Territories and photos of its projects.

⁴⁰ Palestinian Hydrology Group (PHG) website. PHG Activities. Accessed 11/06/11.
<http://www.phg.org/weare.asp>.

⁴¹ Palestinian Hydrology Group (PHG) website. Mission. Accessed 11/06/11.
<http://www.phg.org/phgorganization.asp>.

Agricultural Development Projects - Greenhouses

A major project many of these organizations fund, largely through the use of development aid, is the construction of greenhouses. There are many diverse types of agriculture across Palestine with most of the major commercial agriculture located in the northern region of the West Bank. This area has access to more water resources than other areas of the West Bank and has a better climate for growing crops. The main months for growth are October through April. Other months in the year are generally spent preparing for the next season or working in Israel to gain additional income. During a focus group in Bardala in the Tubas Governorate under the auspices of Mr. Feras Badran with ARIJ, I was able to meet with the heads of several farming cooperatives in the region. Bardala was chosen for the meeting because of a nursery project taking place there as part of the TATWEER project. A number of greenhouses had been constructed in order to grow seedlings which could then be transplanted to the surrounding villages. Prior to the project, plants had been brought in from outside areas but by growing them in Bardala the plants were already acclimatized to the weather and soil conditions in the region.

The farmers present in the focus group, Methqal Fuqha, Basam Sawafra, Esam Fuqha, and Ashraf Sawafra all stated that greenhouses decrease water use.⁴² However, Mr. Feras Bardan with ARIJ said water use depended on the types of crops being grown and the conditions under which they were being grown for how much water they

⁴² Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

consumed (even in greenhouses). Mr. Badran also pointed out that greenhouses reduce evaporation and therefore can be more water efficient in some ways. The cucumber was the main crop grown in this region. In greenhouses these can be grown and harvested for five to six months as opposed to open fields where they can only be grown for two months of the year.

There are different varieties of crops grown in greenhouses versus those grown in open fields. In the open fields the farmers only needed to irrigate approximately ten days during the winter season. The remainder of the water could be provided through natural rainfall. Greenhouses, in comparison, need water every day, even during the winter months. The farmers and Mr. Badran stated that greenhouses can produce up to three times more produce than open field agriculture (tomatoes and cucumbers).⁴³ Greenhouses were generally seen as beneficial and the farmers were pleased that they had access to them.

Mr. Jalloud of PARC also discussed the usefulness of greenhouses saying that greenhouses are preferred by farmers because they can plant more crops and the frequency of product yield increases. “The impact of drip irrigation on yields is even more dramatic when it is combined with plastic tunnels or greenhouses. To illustrate, a dunum⁴⁴ of cucumbers yields less than 1 ton under traditional furrow cultivation, 4 tons under drip irrigation without covers, and 10-15 tons under a combination of drip

⁴³ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

⁴⁴ One dunam = one decare (1000 m²).

irrigation and greenhouse.”⁴⁵ Palestinian farmers are able to produce year round using greenhouses as opposed to open field agriculture where they can only harvest once during the season, usually in the spring. Mr. Jalloud said that many farmers believe there is more profit by using greenhouses because of this greater production capability.⁴⁶ When looking at greenhouses and water usage, one must take water productivity into consideration. Greenhouses make the use of water far more productive than open field agriculture. The general trend seemed to be that farmers I spoke with preferred greenhouses and would utilize them if they were available.

One of the stated projects of PHG is, “installation of greenhouses and construction of home gardens including equipment of material from seedlings to irrigation networks.”⁴⁷ ARIJ, PARC, and PHG are all actively involved in promoting greenhouse construction. These organizations believe that using greenhouses to increase production helps aid Palestinian self-sufficiency and food security.

Agricultural Development Projects – Wastewater Treatment Plants

Another major development funded project geared toward the agricultural sector is the construction of wastewater treatment plants. Through these plants, water can be treated and then put back into use in the agricultural sector. If wastewater treatment plants could be built and utilized on a considerable scale it would increase the amount of

⁴⁵ Elmusa, *Water Conflict*, 158.

⁴⁶ Thaer Jalloud with PARC interview. PARC headquarters in Ramallah. (10/27/11).

⁴⁷ Palestinian Hydrology Group (PHG) website. Agriculture and Food Security. Accessed 11/06/11. <http://www.phg.org/activites.asp?category=2>.

water available to Palestinian farmers and increase the overall quantity of Palestinian agricultural produce.

Mr. Jalloud informed me that PARC works toward constructing wastewater treatment plants. He said that these could provide millions of cubic meters of water for agricultural purposes. There is a plant located near Ramallah that treats 4,000-5,000 cubic meters of water per day. The infrastructure itself for the plant cost \$10 million and was funded by KfW, a large German investment bank.⁴⁸ Mr. Jalloud is a firm believer in what he called ‘non-conventional water projects’ such as rainwater harvesting and wastewater treatment plants.

Implications

While these organizations are certainly operating with good intentions, these internationally funded, PNA approved projects may actually serve to hurt Palestinians in the long run. The PNA does not have the level of control over the agricultural sector necessary to determine agricultural policies. They are attempting to be a state and operate as such without the benefit of being given statehood. These organizations and projects are an attempt to control and profit from the Palestinian agricultural sector. However, they seem to be somewhat misguided.

Greenhouses do boast many positive features like their usefulness in growing crops year-round and their ability to reduce evaporation. Wastewater treatment plants seem like an excellent way to increase access to usable water resources. However, when

⁴⁸ Thaer Jalloud with PARC interview. PARC headquarters in Ramallah. (10/27/11).

one deconstructs the process of building greenhouses or wastewater treatment plants they can see that the process is heavily dependent on Israel. The materials necessary to build greenhouses and treatment plants are all produced in Israel. Farmers and groups wishing to build greenhouses and treatment plants must first purchase all of the necessary materials from Israel before they can be constructed. This includes the plastic, steel, concrete, etc all needed to construct greenhouses or treatment plants. If the donor countries wish to donate the building materials themselves they encounter Israeli taxation. Hever discusses this issue, saying, "...the protocol, nicknamed the Paris Protocol, stipulated that all aid to the Palestinians would pass through Israeli customs, making it possible for the Israeli government to exact tariffs from the aid goods."⁴⁹ Regardless, of the path materials take to enter Palestine, Israel's economy benefits from these projects and from development aid. Moreover, this implies Israeli control and thus Palestinian dependence, even in constructing the infrastructure to better control its agriculture.

This chapter has introduced some of the organizations that are working on agricultural projects in the OPT. I have highlighted the inability of the PNA to control the Palestinian agricultural sector, even in projects that ostensibly create the institutions of self-sufficiency. These organizations all rely on foreign aid that allows Israel to ignore the damage it does to the Palestinian agricultural sector and pass the responsibility for this on to the international community. In so doing, Israel is simultaneously further entrenched in the Palestinian agricultural sector and the Palestinians are further reliant on

⁴⁹ Hever, 22.

inputs, permissions, and edicts of an occupying power. This chapter has introduced two of the projects under way by many of these NGOs, greenhouses and wastewater treatment plants. These projects were a recurring theme with farmers and experts interviewed in this research. The specific inputs necessary for these projects and Palestinian agriculture in general will be discussed in the next chapter and the degree of reliance on Israel for supplies will be explored in greater detail.

CHAPTER THREE – AGRICULTURAL INPUTS

“During the four decades of occupation, Israel has enforced a total dependence of the Palestinian economy on Israel.”

-TANYA REINHART, Israel/Palestine

Agricultural initiatives in the Palestinian territories are generally designed to improve efficiency and production. The guiding rationale behind many of these projects is that greater investment in the agricultural sector will help lead to Palestinian self-sufficiency. A number of projects aim to allow Palestine to grow all of the crops it needs for its own consumption. Many of the projects aim to improve currently existing agricultural structures, such as irrigation networks or to create new infrastructure such as greenhouses and wastewater treatment plants.

These are admirable goals and Palestinian self-sufficiency should be a driving force behind investment. However, the structure of the Palestinian agricultural sector makes it an impossible place for investment if self-reliance is the goal. A great deal of the money donated to agricultural projects is taxed by Israel or spent in Israeli markets, further increasing Israeli economic domination over the Palestinian territories. Every major agricultural input is either purchased directly from Israel or controlled by it. Palestinians are trapped in a system that forces reliance on Israel for survival, and Israel is insulated from the burden of occupation by the very aid that is intended to help the Palestinians. This chapter will defend the assertion that all agricultural inputs are controlled by Israel, paying particular attention to the issues of land and water, as they are the two most basic necessities of agriculture.

Land

One of the two most important inputs for agriculture is land on which to grow crops. Unfortunately, Palestine is a nation under occupation and does not control vast swaths of its own territory. As discussed previously, the Oslo Accords led to the division of Palestine into administrative districts with full Palestinian control in Area A, civil but not security control in Area B, and full Israeli control in Area C. The majority of Palestinian agricultural land is located in Area C and therefore under complete Israeli control. This forces Palestinian farmers to confront a number of obstacles when attempting to cultivate their land.

In much of Area C any sort of building is prohibited. Palestinian farmers are not allowed to build shelters or houses on the land. If their land is in close proximity to a settlement or Israeli-only bypass roads, the farmers are not allowed to be present on their land overnight. Mr. Jalloud with PARC noted that in Area C, military issues are predominant, and he expressed his feeling that little could be done to improve Palestinian agriculture in these areas under current laws.⁵⁰ The Palestinian Central Bureau of Statistics (PCBS) issued the 2010 Agricultural Census which included information on impediments to agricultural activity. “Data indicated that 7,835 of the agricultural holdings in the West Bank were constrained in using agricultural holdings parcels due to the expansion of the annexation wall, and 12,797 holdings were constrained in using agricultural holdings parcels by settlements, and 7,292 holdings were constrained in using agricultural holdings parcels by military barriers, while 7,971 holdings in the

⁵⁰ Thaer Jalloud with PARC interview. PARC headquarters in Ramallah. (10/27/11).

Palestinian Territory constrained in using agricultural holdings parcels by land being in closed military areas.”⁵¹ These impediments drastically reduce the amount of agricultural territory available to Palestinian farmers and force organizations working toward agricultural improvement projects to focus on Areas A and B. The Jordan River Valley is located in Area C and this contains some of the most productive agricultural land but it is unable to fully develop its potential due to Israeli restrictions and control over the land.

Palestinian farmers who own or work territory are often unconfident of land ownership. Israel has a well documented policy of land confiscation. This is done for a number of reasons, including illegal and “legal” settlement expansion, road construction, Israeli military and security installations, etc. A major factor impacting land confiscation has been the construction of a 760 km. long Separation Wall.⁵² The wall has garnered a great deal of media attention and wide international condemnation.

“On April 14, 2002, the Israeli cabinet decided to establish a permanent barrier in the West Bank, made up of a series of electronic fences, deep trenches, wide patrol roads, and, in certain places, nine-meter concrete slabs.”⁵³ Construction of the wall was driven by the outbreak of the 2000 *intifada*. The official stance of the Israeli government was

⁵¹ Palestinian Central Bureau of Statistics, 2011, Agricultural Census 2010, Press Conference on the Final Results, Ramallah, Palestine.

⁵² Names can be contentious. The Israeli authorities and media refer to the barrier as the Security Fence whereas those adamantly opposed to it refer to it as the Apartheid Wall. I’ve chosen Separation Wall because I feel that it is the most descriptive name by clearly articulating the wall’s purpose, separation. It is also important to note here the extent of land confiscation before the Wall. The West Bank had already been divided into numerous enclaves by the construction of approximately 200 settlements and outposts in addition to bypass roads linking the illegal settlements to one another and to Israel.

⁵³ Gordon, 212.

that the wall was necessary to prevent acts of terrorism and violence within Israel. However, many Palestinians see the wall as a way for Israel to enclose huge areas of Palestinian land on the Israeli side. “Although the barrier has been presented as a “temporary” security apparatus aimed at stopping suicide bombers, the Israeli government has constructed parts of the barrier deep inside the West Bank, using it as a political weapon to confiscate land and thus to contract Palestinian space. The barrier is being built east of as many Jewish settlements as possible to make it easier to annex them into Israel in the future.”⁵⁴ The wall does not follow the 1948 green line, instead it snakes into the West Bank, often depriving Palestinian villagers of their farmland or water resources and separating farmers from their fields and dividing family members. The wall makes Palestinian life extremely difficult. It often requires travelers to take routes far longer than what would have originally been necessary. Crossing the wall is a difficult and time-consuming process. There are intermittent checkpoints, where those attempting to cross must show identification and can be denied access at the discretion of Israeli border guards. At times those needing medical attention have been unable to cross the wall in time to receive help. The wall severely hampers the freedom of movement of Palestinians, and has made large tracts of farmland more difficult or impossible to farm.

The wall has been marketed to the Israeli public as a security barrier and it is true that since its completion there have been fewer bombings within Israel. This may also be due in part to the PNA’s concerted efforts to stop terrorist attacks. Some see the barrier as a catalyst for further violence and believe that by cutting Palestinians off and depriving

⁵⁴ Gordon, 212.

them of land and resources the root causes of resentment and anger which fuel terrorist attacks and Palestinian feelings of mistreatment will continue to grow. Palestinian responses to the wall have been overwhelmingly negative. They argue the illegality of the wall and point to its construction as a human rights violation.

Land confiscation was a common theme throughout my fieldwork in Palestine and the wall itself ominous and omnipresent. I spoke with a farmer in the central Bethlehem marketplace named Musa. He told me that he currently owns 50 dunams of land but had lost 80-90 dunams to Israel. He said that the Israeli authorities initially offered him money which he refused because as a Muslim he felt that it was, “*haram* to sell any part of Palestine”. After Musa refused to sell his land Israel took it by force and annexed it within the Israeli side of the Separation Wall. He said settlers now had control and were farming his 80-90 dunams of land.⁵⁵ Other farmers with which I spoke reiterated this theme.

The village of Al-Walajeh lies in a hilly area to the northwest of Bethlehem. It is almost entirely surrounded by the Separation Wall and Israeli settlements⁵⁶ and forms a small peninsula into what is now Israeli territory. I met an elderly man in a convenience store in the town and he told me the history of the village. He said that the original village of Al-Walajeh was destroyed in 1948 when Israel was created and the community had relocated and formed new Al-Walajeh, the current village, on the outskirts of

⁵⁵ Musa. Interview in Bethlehem market. Translated by Nathaniel Kahler. (10/19/11).

⁵⁶ Beitar Illit and Har Gilo, both part of the Gush Etzion settlement bloc.

Bethlehem.⁵⁷ The farmers of Al-Walajeh felt that the Har Gilo settlement had been heavily developed in the last two years. Shir Hever, who has done considerable work on the political economy of Israel's occupation, corroborates the feelings of many Al-Walajeh residents I spoke with.

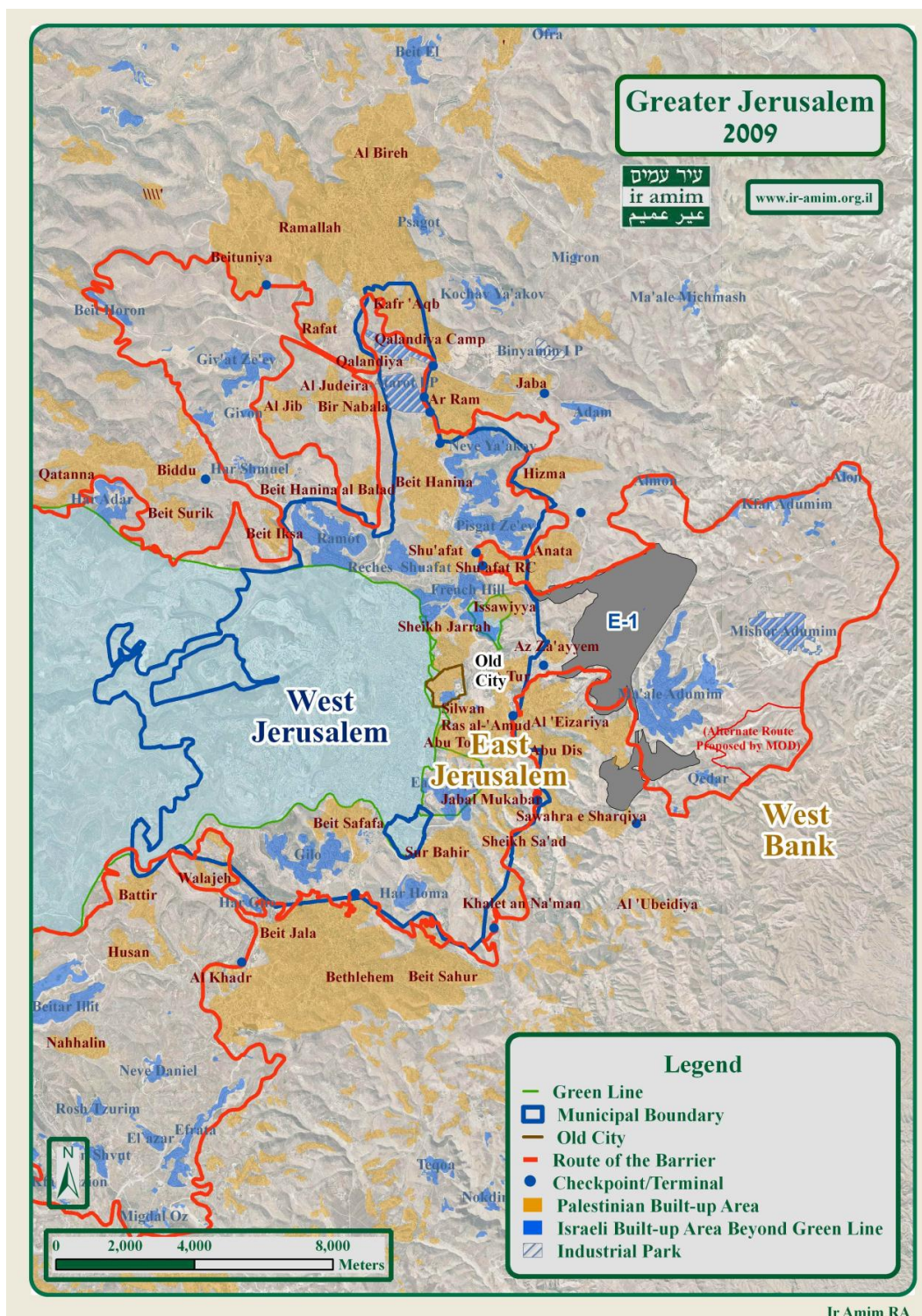
The village of Al-Walajeh, mostly populated by Palestinian refugees from Israel, is gradually being surrounded by the Wall on all sides. The village has lost its agricultural lands because of the Wall. The southern side of the village is already blocked by a road that Palestinians are not allowed to use. Israel has promised an underground passage to connect the village to the rest of the West Bank, which had yet to be built as of 2008.⁵⁸ The village of Al-Walajeh has been subject to a series of land confiscations, house demolitions, and "flying checkpoints" (temporary unexpected checkpoints). The confiscation of lands on the outskirts of the village effectively blocks all movement to and from Al-Walajeh. In 2004 Israel declared its intention to construct a settlement, Giv'at Yael, to absorb 55,000 settlers. The sinister factor here is that, although the village still exists, the maps released by the government show that the planned settlement area includes much of its populated residential area; it would seem the intention is to expropriate the lands of the village without compensating the residents.⁵⁹

The settlements continue to grow and the Palestinians continue to lose their land. Every farmer and villager in Al-Walajeh with whom I spoke expressed their fears that soon Israel would build the Separation Wall a little further and completely cut the village off from the rest of the West Bank. Map 3.1 shows the village of Al-Walajeh to the south of Jerusalem. One can see the village almost completely surrounded by the Separation Wall next to the settlement of Gilo.

⁵⁷ Mohammad. Interview in Al-Walajeh village. Translated by Nathaniel Kahler (10/22/11).

⁵⁸ Also as of 2011. There was no tunnel when I visited.

⁵⁹ Hever, 124.



Map 3.1 – Greater Jerusalem, 2009. Source: Ir Amim⁶⁰

⁶⁰ <http://www.ir-amim.org.il/eng/?CategoryID=162>.

3isa, the head of a Palestinian agricultural collective in the Bethlehem area discussed land confiscation, “We have here in Khader, as I said, 22,000 dunams. The wall, you saw it, where the tunnel is, left us with but 2,000 dunams and the 20,000 outside. We lost! We brought a legal claim”. Asked if the settlements now use this land 3isa said, “Yes, for grapes. They close the door around us. We brought it to court, we have an Israeli lawyer, his name is Michael Sfard, and this is a good way, but it stops our work. They claim there are security reasons. We don’t make problems with the settlers, if we don’t, why close the door on us?”⁶¹ Palestinian farmers are unable to maintain their agricultural land that is taken by Israeli settlers, and then the produce of this confiscated land is often sold in Palestinian markets.

In addition to a lack of control over agricultural land, strict Israeli regulations, land confiscations, and the Separation Wall, Palestinian farmers also face violence from the Israeli settlers who now occupy Palestinian land. Figure 3.1 shows the steady increase in settler population in the West Bank since 1967.

⁶¹ 3isa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

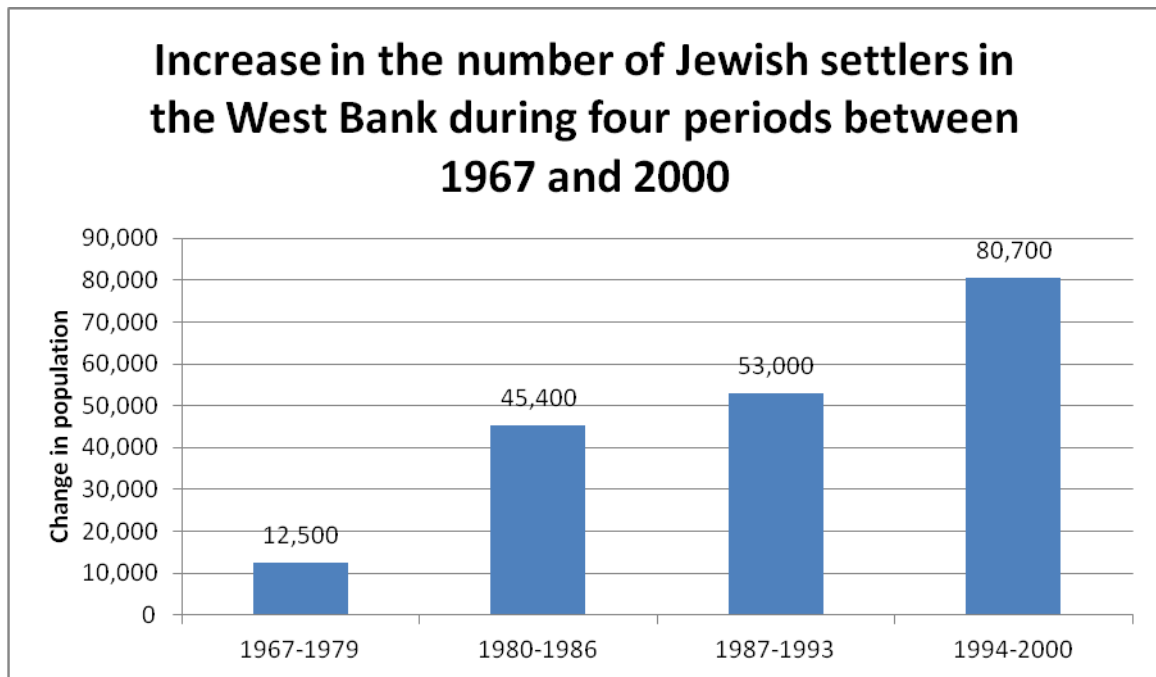


Figure 3.1 – Settler increase.

Source: Yehezkel Lein, *Land Grab: Israel's Settlement Policy in the West Bank* (Jerusalem: B'Tselem, 2002).⁶²

The Bethlehem farmer mentioned above, Musa, who lost 80-90 dunams of his land to the wall, lives very close to one of the Israeli settlements (Beitar Ilit) and said settlers had recently destroyed approximately 500 of his grape trees. He said the settlers are armed while he is not and expressed his frustration that there is nothing he can do when they choose to come and destroy his property.⁶³ Palestinian farmers with which I spoke often voiced this sense of frustration and helplessness. There is little they can do to challenge the settlers now living and working their land.

⁶² Gordon, 194.

⁶³ Musa. Interview in Bethlehem market. Translated by Nathaniel Kahler. (10/19/11).

Elisa Molena, an intern with Holy Land Trust, completed work on a Palestinian farm in the fall of 2011 and shared her story with me. She elaborated on and emphasized the role settlers play in disrupting Palestinian agriculture. Elisa worked with the Tent of Nations⁶⁴ project. This is a large family owned farm outside Bethlehem and it has become a center for international solidarity activity. The farm is surrounded by Israeli settlements and Israel wishes to annex the land for settlement expansion. Israel has given the landowners a notice of confiscation but the family refuses to leave. They have set up a large international farm where volunteers from other countries can come help and learn about Palestinian agriculture. The family's oldest son runs the entire project. He studied in Germany and maintains a number of contacts there resulting in the project receiving a large amount of German funding. Grapes are the primary crop and the family has begun exploring the idea of producing and bottling wine. Elisa said that she enjoyed her time working there but grew quite frustrated and eventually had to leave because it was such a stressful situation. The family and volunteers were unable to move around at night for fear of settler violence as settlers often chose this time to come down and destroy the farm's crops and infrastructure.⁶⁵ International volunteers provide a valuable service in that the IDF has shown itself less willing to act with force if non-Palestinians are present, but this does little to deter the violent actions of some settlers.

The PNA does not have complete control over Palestinian territory and as Israel has demonstrated in the past, they are willing and able to move into Area A if they

⁶⁴ Tent of Nations. Accessed 11/08/11. <http://www.tentofnations.org/>.

⁶⁵ Elisa Molena. Interview at the HLT headquarters in Bethlehem (10/17/11).

believe it is warranted by the security situation.⁶⁶ Land is something the Palestinians desperately need, not only for the development of an independent Palestinian state, but to give Palestinians agency over their own agricultural sector.

Water

Inextricably tied to the land are water resources. In order to understand the water situation facing the region one needs an understanding of the basic hydro-geography of the area. The Jordan River flows from four main tributaries; the Hasbani originating in Lebanon, the Banias from the base of Mt. Hermon, the Dan also from the base of Mt. Hermon, and the Iyon flowing from Lebanon. These join together and form the Sea of Galilee which continues southward, joining with the Yarmouk and Jabbok/Zarqa Rivers before emptying into the Dead Sea. Map 3.2 shows the tributaries and path of the Jordan River.

⁶⁶ Israeli incursions into Jericho and Jenin during the 2000 *intifada*. The Battle of Jenin April 1-11, 2002. The storming of Jericho Prison March 14, 2006.



Map 3.2 – The Jordan River. Source: pbs.org⁶⁷

The Jordan River is 156 miles long and has a discharge of 1.6bcmy⁶⁸, as compared to the Nile at 4,130 miles and a discharge of 83.6 bcmy.⁶⁹ The Jordan River

⁶⁷ http://www.pbs.org/newshour/extra/images/medium/jan-june09/jordanriver_lg.jpg

⁶⁸ bcmy = billion cubic meters yearly

and the underground West Bank aquifers are the main sources of fresh water for Israel, Jordan, and the Palestinians and therefore extremely important from an agricultural standpoint. Lebanon and Syria are both able to draw from other substantial water sources and do not claim a large portion of the waters from the Jordan River. However, Jordan is almost completely dependent on the river for its survival.

Israel had a 2010 population of 7,473,052 (not including the Jewish settlers in the Occupied Territories, who number approximately 192,000 in East Jerusalem (2008) and 296,700 in the West Bank (2009)) at an expected growth rate of 1.584%. Jordan's population in 2011 was at 6,508,271 growing at 0.984% and the Palestinian population in the West Bank in 2010 at 2,568,555 growing at 2.097%. The Gaza Strip is one of the most endangered areas in the world due to water scarcity and pollution. The population of the Gaza Strip in 2011 was 1,657,155 growing at 3.201%.⁷⁰ The coastal aquifer is Gaza's only source of fresh water and it is becoming increasingly unusable due to the intrusion of salt water from the Mediterranean Sea. The growing number of inhabitants has already outpaced the region's water supplies.

Agriculture in Palestine has been heavily influenced by Israeli control over water resources. There is a huge disparity between the average amounts of water an Israeli receives versus the average amounts a Palestinian receives. Since 1967 Israel has been able to impose a highly biased system of water allocation in which Palestinians are

⁶⁹ Jan Selby. *Water, Power & Politics in the Middle East; The Other Israeli-Palestinian Conflict*. (New York: I.B. Tauris, 2003), 22.

⁷⁰ CIA World Factbook, accessed 11/04/11 <https://www.cia.gov/library/publications/the-world-factbook/fields/2119.html#is>.

denied equal water rights. The Oslo Accords further legitimized this disparity with Palestinian support. “The majority of the West Bank’s groundwater resources are likewise used by Israelis rather than by Palestinians: at the time of the 1995 Oslo II Agreement, 85 per cent of the West Bank’s groundwater resources were consumed by Israelis and only 15 per cent by Palestinians. The effect of this was and continues to be that per capita gross domestic supplies in Israel were three times what they were for West Bank Palestinians (100 cmy compared to 38 cmy in the West Bank in 1995...)”⁷¹ This stark inequality has led to numerous attempts by Palestinians to dig new wells and find alternative sources of water. The juxtaposition of Israeli settlements containing swimming pools adjacent to Palestinian villages with only intermittent access to water throughout the year is hard to understand or explain.

The Interim Agreement on the West Bank and Gaza Strip (Oslo II) signed in 1995 led to greater Palestinian control in certain regions and also covered a number of important issues brought up during the earlier Oslo Accords. The issue of water rights was addressed in more detail in the Oslo II negotiations. “Along with the issues of Jerusalem and the Jewish settlements, negotiations over water rights between the Palestinians and Israelis were postponed in 1995. This was an indication of the scarcity of water in the region and of the adamant diametrical positions held by each side.”⁷² While water figured more prominently in this second round of negotiations, it was still classified

⁷¹ Selby, 30.

⁷² Yousef Nasser. “Palestinian management options and challenges within an environment of scarcity and power imbalance” in *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin* ed. J.A. Allan. (New York: I.B. Tauris, 1996), 52.

as a final status issue to be discussed and negotiated during the final agreements between the two parties.

The Taba Agreement of 1996 sought to further address the issue of water rights. “Israel recognized the Palestinians' right over the water resources found on their territory. As in the case of the Jordanian agreement, a water commission was established that had wide-reaching powers, including the controlling of the drilling of new wells, the construction of waste systems, as well as the opening of additional water sources. Furthermore, Israel granted the Palestinians 60 million m³/year of the Eastern Mountain Aquifer in the West Bank and proposed the supply of water from the national water system, in particular in the Gaza Strip.”⁷³ A joint water commission was created which, in theory, would allow for both Israeli and Palestinian management of water resources. In the 1980s the Israeli military government imposed a system of quotas on wells in the West Bank and a ceiling on how much water could be extracted. “The quotas and metering system were kept in place by the Taba accord. Monitoring compliance was to be done by “joint supervision and enforcement teams” (JSEET), made up of equal numbers from both sides. Those teams were empowered with free access to all the Palestinian sites and enforcement of compliance whenever violations were detected (Annex III, Article 40, Schedule 9).”⁷⁴ However, this ideal situation did not come to fruition. “In the Israeli-Jordanian peace agreement and in the Taba Agreement Israel used its dominant position to contractually secure its current use of the Jordan water supply and a large part of the

⁷³ Helga Haftendorn. “Water and International Conflict” *Third World Quarterly* 21. no. 1 (2000): 61.

⁷⁴ Elmusa, *Water Conflict*, 89.

underground water store, while the Jordanians and Palestinians essentially only obtained the surplus of future water resources and the offer of technical and financial assistance.”⁷⁵ The agreement did little more than imply Israeli water sharing while allowing Israel to maintain full control over the water resources.

Jan Selby, a British academic and writer, argues that far from being revolutionary, the Oslo Accords only institutionalized and made widely acceptable water sharing practices that were already in place. Israel continued to control all of the water resources of the West Bank, though now with Palestinian organizations set up to do the actual monetary collection and maintenance. The Joint Water Committee (JWC) allowed Israel to maintain its control over the West Bank’s water resources but to do this from a withdrawn position, allowing Palestinians to serve as middlemen. Selby argues the Oslo Accords did little to change the status quo and only served to further entrench Israeli control over Palestinian resources but this time with Palestinian help and support. Neve Gordon uses the phrase “outsourcing the occupation” to describe the ways in which the Oslo Accords further served to strengthen and legitimize Israeli control over Palestine.⁷⁶

Water is not only necessary for biological survival. It holds a unique place in the ideology and traditions of both Israelis and Palestinians. As mentioned in Chapter One, Labor Zionism was the main ideological trend shaping Israeli state formation. Labor Zionism’s emphasis on a return to the land made agriculture an important ideological issue for many Israelis. Agriculture in Israel has slowly diminished, comprising only 2.4

⁷⁵ Haftendorn, 64.

⁷⁶ Gordon, 169.

percent of the GDP and 2 percent of the labor force in 2010.⁷⁷ However, the agricultural lobby in Israel's Knesset is powerful beyond their size and has often been able to influence political decisions regarding agriculture in their favor.

An important component to the water situation in the region is what scholars have dubbed 'virtual water'.

Even more important for Israel and the Middle East, but nonetheless barely noticed, is the import of what Tony Allan refers to as 'virtual water'. During the late 1960s, Israel began to switch the focus of its agricultural production from cereals and other food staples, to the production of high value agricultural crops, and to import food staples from Europe and in particular the US. Besides allowing more water to be used for relatively high value agricultural, industrial and domestic purposes, this policy also in effect meant that Israel was henceforth making use of rain that had fallen in Europe and North America, and is used there for the production of food staples. Allan calculates that the total water and food production needs of the present populations of Israel, the West Bank and Gaza are 7.5bcm³, which, if correct, would suggest that two-thirds of their total water needs are imported from abroad in barely noticed virtual form.⁷⁸

By importing water intensive crops such as grains, Israel is able to, in effect, buy water at a cheaper price than it would cost to use their own water resources to grow the same crops.

Palestine has traditionally been an agrarian society economically dependent on agriculture. Yet, agriculture only makes up 3.7 percent of the Palestinian GDP and represents 12 percent of the workforce.⁷⁹ Before 1948 Palestinian farmers were using

⁷⁷ CIA World Factbook. Accessed 11/04/11. <https://www.cia.gov/library/publications/the-world-factbook/fields/2119.html#is>.

⁷⁸ Selby, 37.

⁷⁹ CIA World Factbook, Accessed 11/04/11. <https://www.cia.gov/library/publications/the-world-factbook/fields/2048.html#is>

more irrigation water and had more irrigated land area than the Jewish settlers.⁸⁰ This changed with Israeli territorial expansion in 1948 and then changed again drastically with full Israeli control in 1967. The argument that Palestinians were not using the land is inaccurate and should not be used to justify Israeli land confiscation. In addition to irrigation practices, agriculture in Palestine has always relied on rainfall and the existing wells. “Still, in spite of its low yields, rain-fed agriculture remains at the core of Palestinian crop production in the West Bank owing to the extensive area it covers.”⁸¹ The areas available for cultivation have been unable to expand since 1967 because Israel has prevented the drilling of new wells or the acquisition of new water resources by Palestinian farmers. Palestinian agriculture has been frozen in time in its 1967 state.

Father and son tomato farmers, Hysam and Hytham in Sair Village outside of Hebron, said “Water is everything for agriculture. Water is life. Without water there is no agriculture. Without water it’s the end.”⁸² For Palestinian farmers this lack of water is due both to natural factors and to Israeli control. There is simply not enough water in the Jordan River, annual rainfall, underground aquifers, and springs to meet the demands of both Palestinians and Israelis. However, Israel controls every water source (excluding the ability to make it rain but including control over cisterns in which Palestinians store rainwater) in Palestine and as such the Israeli government imposes water scarcity on the Palestinian population.

⁸⁰ Elmusa

⁸¹ Elmusa, *Water Conflict*, 186.

⁸² Hysam and Hytham. Interview in Sair Village, outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

The Jordan River Valley is an incredibly fertile area. However, it is located in Israeli controlled Area C and Israel has created a security buffer zone along the Jordan River prohibiting Palestinians from utilizing its waters. Mr. Badras with ARIJ said that farmers whose land borders the river are not allowed to use any of it due to Israeli ‘security considerations’.⁸³ I spoke with a fruit and vegetable vendor named Ayman in the Ramallah central market and he reiterated this assertion. He said that Palestinian farmers are unable to utilize the river even if their land borders directly on it.⁸⁴ This has been the case since 1967 when Israel gained control of the entire West Bank and created the security buffer zone. The inability of Palestinian farmers to utilize this important natural resource has impacted the development of agriculture in the Jordan River Valley with agricultural focus shifting to Areas A and B.

A major problem facing Palestinian water usage are the levels at which Israel allocates water resources. Israel gained control of all the territory and water resources in the region, including the headwaters of the Jordan River and the underground West Bank aquifers after the 1967 war. Since 1967 Israel has kept the Palestinian water allocation levels the same and has not compensated for increased population growth. Palestinians currently get roughly the same amount of water as they did in 1967 when the Palestinian population was just over a million people. This water must now be shared with a population of over four million people.

⁸³ Feras Badran with ARIJ. Focus group interview in Bardala, Tubas governorate. (10/25/11).

⁸⁴ Ayman. Interview in Ramallah main market. Translated by Nathaniel Kahler (10/23/11).

In addition to Israeli control over the Jordan River, Israel also gained control over the underground West Bank aquifers after the 1967 war. These aquifers are one of the best sources of freshwater in the region and where Israel gets the majority of its drinking water. Numerous Israeli water experts have argued against any return of the aquifers to Palestinian control in a final settlement and argue that returning these water resources would severely endanger Israel's water security. Zisa addressed this issue and said that "the problem is in Area C, all this is Area C [referencing the area around Bethlehem], in all of Area C the Palestinian Authority does not have jurisdiction, meaning they don't work in it. But this whole area has under it a sea of water. But all that water goes to Israel. They don't give us but a little. They take 95 percent and give us 5, or even less. And that 5 percent isn't enough for our civil needs or our agriculture."⁸⁵ Palestinians are only allowed access to these underground resources with Israeli permission, which is difficult to obtain.

Palestinians are not allowed to dig new wells, even if these wells are on their own land. Farmers must first get permits from Israeli authorities and these are not often granted. After 1967 the West Bank and Gaza were placed under an Israeli military government which ruled through military orders that had the force of law, although Israelis living in illegal settlements in the OPT were ruled under Israeli law and not the military orders. The permit system became an important part of the military government. "This regime was created by a complex fabric of military orders and included licenses such as car registration and driving licenses, as well as permits for engaging in certain

⁸⁵ Zisa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

financial activities like registering a business or exporting and importing goods. Building homes or any other kind of edifice also required permits.”⁸⁶ These permits were often costly and time consuming to obtain and requests were often denied entirely. In 1981 the military government created a Civil Administration to take care of administrative tasks such as issuing permits. “After the formation of the Palestinian Authority, the Jerusalem outskirts become a complex mosaic of regions A, B, and C, separated by numerous roadblocks. Freedom of movement is still determined by the permanent regime of the civil administration.”⁸⁷ The Civil Administration issues a number of permits, such as for Palestinians seeking employment within Israel as well as for travel from the West Bank into Israel and within the West Bank.

3isa discussed the permit system, saying, “This year we wanted to re-dig four wells, well known agricultural wells, which required permission. This permission had to come from the administration of Area C, which of course did not give us the permission to dig the wells.”⁸⁸ Existing wells have often fallen into disrepair and Israel does not allow farmers to maintain their current water resources. Almost every Palestinian I spoke with mentioned the problem of building wells. Many pointed out that Palestinian wells, when allowed, have a depth limit, and that Israeli wells built in the West Bank are not required to abide this limit. A large number of Palestinian farmers, vendors, and experts

⁸⁶ Gordon, 33-34.

⁸⁷ Hever, 110.

⁸⁸ 3isa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

all attested to the fact that Israel builds wells deeper than the Palestinians and that this in turn drains the water from the Palestinian wells into the Israeli ones.

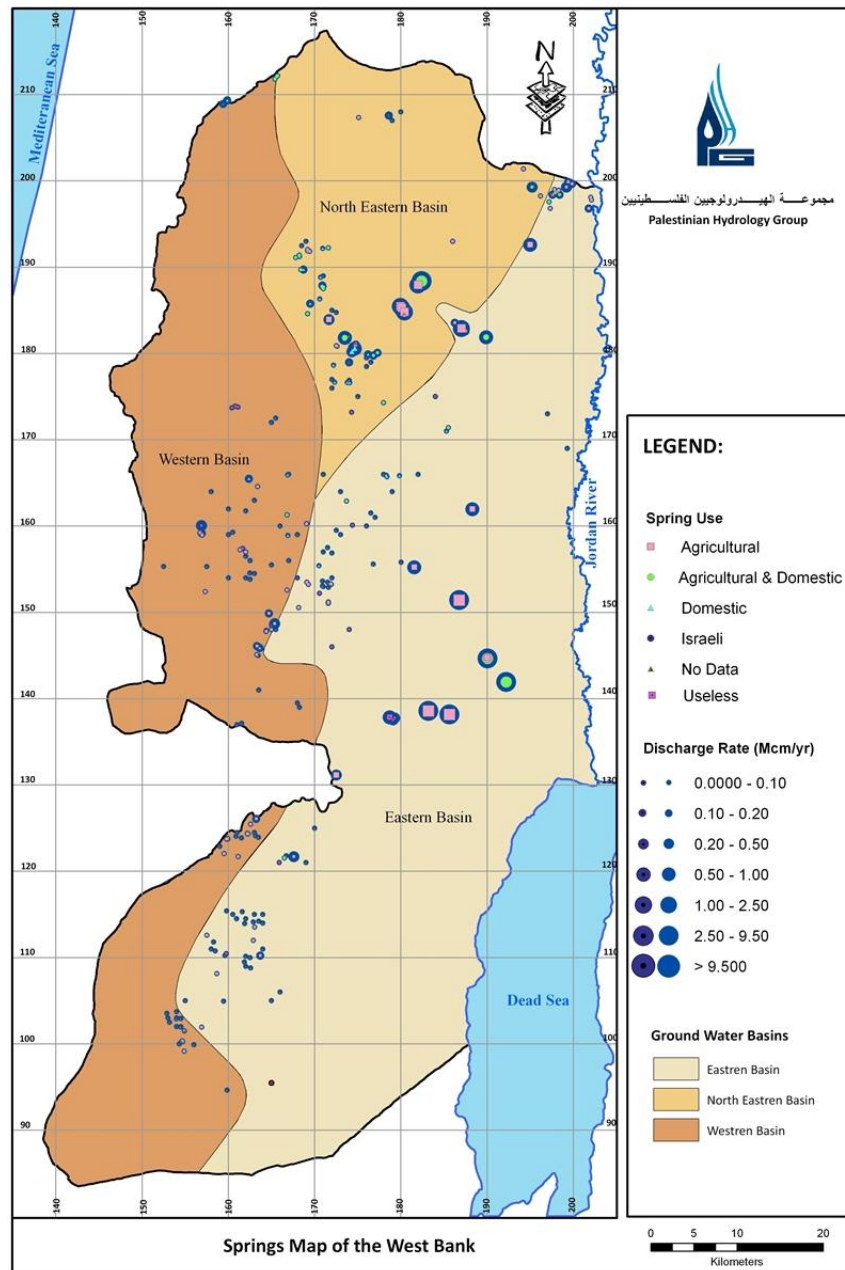
Not only are Palestinian wells being drained by deeper Israeli wells, but natural springs in Palestine are also being affected. Map 3.3 shows the distribution and discharge rates for the springs located within the West Bank. Mr. Jalloud of PARC believed that springs were going dry across Palestine because Israel dug wells in the catchment areas of these springs.⁸⁹ This is a highly controversial issue with the exact causes for spring depletion the subject of debate. “Some of the villages that have been affected were al-Auja, north of Jericho; ‘Ayn al-Bayda; and Bardala, in the northeastern corner of the West Bank. The hydrological reasons for the drying up of the springs and wells in these three villages are complex and cannot be pinned down definitively, particularly in the absence of detailed and specific spatial and temporal data about the “source” and “target” of injury.”⁹⁰ At times Israel has acknowledged its role in depleting Palestinian springs and it has allowed the digging of new wells; however, Israel does not release data on the specific causes of spring depletion. 3isa said that, “the Israelis don’t cooperate with us on these things. We also have springs. There is one spring which gives between 30 and 50 cubic meters of water daily, depending on the season, and this spring could be used. Now the Israelis have closed it and use its water for public greenery, for beautification, not agriculture.”⁹¹ Previously, springs had served as a vital source of water for Palestinian

⁸⁹ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

⁹⁰ Elmusa, *Water Conflict*, 257.

⁹¹ 3isa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

agriculture but now farmers are being forced to find alternative means of watering their crops.



Map 3.3 – Springs in the West Bank. Source – PHG⁹²

⁹² http://www.phg.org/data/maps/water_resources_maps/fullview/full_groundwater_basins_springs.jpg.

Palestinian wells can be appropriated by Israeli authorities. A group of vendors in the Bethlehem market mentioned that there were five wells in the Bethlehem area that were appropriated by Israel and that Israel now sells this water back to the Palestinians.⁹³ Palestinian land and wells can be confiscated by Israeli authorities at any time citing a number of reasons from security concerns to health and sanitation issues.

Many farmers need to purchase water in order to grow their crops. There were varied responses from farmers with whom I spoke regarding the cost of a cubic meter of water, some farmers obviously exaggerating to get their point across to me that water is painfully expensive. A universal theme that quickly became apparent was that there is no set price. Israel can change the cost of water at its discretion and this affects how much water a farmer can purchase.

Rainfall is incredibly important for agriculture in the OPT. Palestinian farmers intentionally grow less water intensive crops and planting is done with rainfall in mind. 3isa discussed cisterns and said that some farmers are able to build them for themselves; whereas, others are built by way of foundations or NGOs through the use of development aid. He said that unfortunately, Israel still controls these cisterns, and so they must rely on rain water.⁹⁴ Many farmers use cisterns to catch and hold the rain and this water can be used later for irrigation. Israel generally allows water-catching cisterns though it does regulate what types can be built in which areas. In Area C farmers are only allowed to build cisterns out of stone or rocks while cement cisterns are prohibited. Ayman, a vendor

⁹³ Interview in a fruit and vegetable market in Bethlehem. Translated by Nathaniel Kahler (10/19/11).

⁹⁴ 3isa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

in the Ramallah market, said that there had been a lot of international funding to build cisterns to hold water from winter rainfall for use during the hotter months.⁹⁵ Palestinian farmers must be careful with the types of water catching devices they create because those caught with these ‘illegal’ cisterns often must watch them be destroyed by the Israeli military. The cisterns are just as vulnerable to Israeli appropriation or demolition as underground water sources, and the regulations on cisterns are unofficial and vary with time and situation. Though they may appear as a viable alternative for development of a self-sufficient Palestinian agricultural sector, these cisterns neither escape Israeli domination nor make agriculture a reliable economic activity. This reliance on rainfall for agricultural production means Palestinian farmers are very susceptible to drought conditions. A year or years without enough rainfall can be devastating for Palestinian agriculture, all the more so with development projects focused on rainwater harvesting.

Olive trees are plentiful in the West Bank due to their low water consumption. They can grow almost anywhere and survive off of natural rainfall. Many of the farmers with which I spoke had olive groves and stated that they existed only because the rain they received was enough to support their growth. A family with which I spoke on the outskirts of Al-Walajeh village, sitting directly below the Har Gilo settlement, told me that they would like to expand the types of crops they produce (from predominately olive

⁹⁵ Ayman. Interview in Ramallah main market. Translated by Nathaniel Kahler (10/23/11).

groves) but they do not have access to enough water and are not allowed to dig new wells.⁹⁶

Many Palestinian olive farmers felt that they had been hit with a major blow in that drought conditions have worsened in the region and average annual rainfall has decreased. “Water has always been precious in this arid region, but a six-year drought and expanding population conspire to make it a fresh source of conflict among the Israelis, Palestinians, and Jordanians vying for the river's life-giving supply.”⁹⁷ Mr. Jalloud from PARC said that olive production was decreasing due to drought and that there was a new desire and need to irrigate olive trees during the summer.⁹⁸ A drier environment means that farmers will have to stretch their already very meager water allocations to include olive irrigation during the summer months if they hope to make a profit on their olives.

When asked what the largest problem was facing them this season Hysam and Hytham said that there was not enough rain. They said that if the precipitation was at its previous levels it would be better and they would see greater profit but that they no longer reap a harvest like they used to.⁹⁹ Zisa noted that, “In retrospect the season of dryness, or the summer, has become longer. Agriculture is good in the winter, but in the

⁹⁶ Family interview in Al-Walajeh village on the outskirts of Bethlehem. Translated by Nathaniel Kahler. (10/22/11).

⁹⁷ Don Belt. “Parting the Waters” *National Geographic*, April 2012.
<http://ngm.nationalgeographic.com/2010/04/parting-the-waters/belt-text/1>.

⁹⁸ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

⁹⁹ Hysam and Hytham. Interview in Sair Village, outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

summer we must supplement our water supply. For example of supplementing water, we carry water by way of tanks from the house to farmland seven or eight kilometers away; by car, by tractor, or even by donkey.”¹⁰⁰ Farmers may not be able to use wells or springs in their area or may not have enough rain water collected near their farms so they are forced to travel to nearby areas in hopes of obtaining the needed water.

Due to the imposed scarcity, Palestinians are forced to transport water long distances or buy water from Israel. Hysam and Hytham said that the amount they get from shared town water is very little so they are forced to bring tanks of water to their crops. Their land is located at a higher altitude and they have no choice but to bring the tanks up by tractor. They said they had cisterns from plastic, cisterns underground, and some springs but that the springs had a modest output. They said this water was not enough for agriculture, but only enough for personal consumption. Hysam said, “They give us a small proportion of the water. The Israelis don’t have the same water pressures. The government gives them more; they have the backing of the government. The Israeli government aids their farmers.”¹⁰¹ Palestinian farmers must move water from location to location or purchase water from Israel because of the uneven allotment of water dictated by Israel.

As with land, the Oslo Accords continued Israeli domination but with Palestinian and international approval. The agreement allowed for Palestinian water companies to

¹⁰⁰ Zisa Mahmoud. Interview at his home in al-Khader. Translated by Nathaniel Kahler (10/21/11).

¹⁰¹ Hysam and Hytham. Interview in Sair Village outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

oversee the taxation of water consumption thus giving the appearance of control. However, this revenue was then passed on to the Israeli national water company, Mekorot. The relinquishment of Palestine's claim to water resources and the agreement to purchase water from Israel is one of the most criticized aspects of the Oslo Accords.

The price of a cubic meter of water varies depending on the region and the time of year. Bethlehem farmer Musa said that he owns his own wells but that these go dry in the summer and then he is forced to buy water. He said that water can only be purchased from Israel. Musa felt that the water being sold to him was from Palestinian wells that had been appropriated by Israel and then was being resold to Palestinians.¹⁰² Mr. Jalloud with PARC said that most commercial agriculture in Palestine takes place in the northern part of the West Bank and in addition to purchased water they have other water resources such as springs. Further south in the West Bank farmers pay more for water. In Ramallah the water is deeper and it is much harder to access here than in other regions of the West Bank so it is more expensive. Water allocation in Palestine is completely contingent on Israeli control and the price and availability can vary dramatically from one season to the next and from one region to another.

Since Israel controls all of the water flowing into the West Bank, it has ability to shut off water to Palestinian areas. Musa noted that the neighborhood in Bethlehem where he was selling his produce received water intermittently. He said sometimes in the summer only one day in 15 was there water flowing to the area. On days with water the Palestinian residents store water in tanks on their roofs that can then be used when the

¹⁰² Musa, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

water is switched off again.¹⁰³ Ayman, from the Ramallah market asked, “If you don’t have water to drink, how will you worry about farming?”¹⁰⁴ Mr. Jalloud with PARC said that Ramallah gets water two times a week and people fill the tanks on their roofs to use the rest of the time. He noted that there is a shortage of water for domestic consumption so necessarily there is a shortage of water for agricultural purposes.¹⁰⁵ Israel has shown itself willing to engage in measures of collective punishment by restricting Palestinian cities and villages’ access to water. Article 33 of the Geneva Convention reads, “No protected person may be punished for an offence he or she has not personally committed. Collective penalties and likewise all measures of intimidation or of terrorism are prohibited. Pillage is prohibited. Reprisals against protected persons and their property are prohibited.”¹⁰⁶ Collective punishment is illegal and a grave violation of Palestinian human rights; however, Israel is by far the more powerful of the two parties and no international pressure has so far been sufficient to force Israel to change its ways. Indeed, development aid only furthers this system of dominance.

The focus group conversation I had in Bardala was very interesting in that farmers, first and foremost, stressed that water is of the utmost importance. Almost all of the issues discussed above were broached and reaffirmed during the interview. The farmers’ first comment was that Israel had appropriated many Palestinian wells. They

¹⁰³ Musa, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

¹⁰⁴ Ayman. Interview in Ramallah main market. Translated by Nathaniel Kahler (10/23/11).

¹⁰⁵ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

¹⁰⁶ International Committee of the Red Cross (ICRC). International Humanitarian Law – Treaties and Documents. “Convention (IV) relative to the Protection of Civilian Persons in Time of War”. Geneva, 12 August 1949. Accessed 11/15/11. <http://www.icrc.org/ihl.nsf/full/380>.

said that the Israeli water company, Mekorot, takes 60% of the water in the area and leaves the Palestinians with only 40%. The farmers also noted that Palestinians, if allowed to build a well, were only allowed to dig to a depth of 100 m. They said that Israel builds wells 220 m deep and that this dries up the water in the Palestinian wells. They asserted that settlements take 1/3 of the water before it comes out of the wells and that therefore reduces the amount of water available to Palestinian farmers. I was told that previously there were 13 springs in the area but that these had all have dried up. The farmers acknowledged that there has been an increase in heat and global warming but stated that the springs and wells were going dry before the current heating trend and they believed this was due to Israeli use. The farmers stated that they originally had access to 6 million m³ of water but this year they were expecting less than 2 million m³, only 1/3 of what was originally there is now available. The overriding feeling and theme was that water prices were arbitrary and unpredictable. Israel had appropriated some of the Palestinian wells and made other wells that were deeper in order to take the water and sell it back to the Palestinians. The water in that particular area was kept in a large storage tank on a hill and water pressure was provided through gravity. The cistern where the water was kept was Israeli controlled. Bardala village is located in Area C and in this area it is illegal for Palestinian farmers to build cisterns of their own, unless they are shallow holes dug in stone. Mr. Feras mentioned a 'red line' and that in this area no water harvesting techniques were allowed (such as dams, cisterns, wells, etc). The farmers believed that Israeli policies were specifically designed to decrease the population in Palestine by making Palestinian agriculture unable to support the population. A farmer

joked, “Israel wants Palestinians to go to Jordan or to hell!”¹⁰⁷ This encapsulates the feelings of most farmers with whom I spoke; a feeling that Israel was systemically working to destroy the Palestinian agricultural sector and push Palestinians off their land.

Labor

Farming in Palestine is largely a family endeavor. Every farmer I spoke with had come from a farming family. The timing of my fieldwork happened to coincide with the olive harvest so I witnessed entire families outside together collecting olives and burning the dead branches. The PCBS 2010 Agricultural Census found that, “There were 292,031 employees in agricultural holdings in the Palestinian Territories: 94.6% of them unpaid family members and 5.4% permanent paid employees during the agricultural year 2009/2010.”¹⁰⁸ The Mohammad Shalata family in Sair Village outside of Hebron said that it takes 10 workers to maintain their 12 dunams of land and that they work one dunam per day with 10 family members.¹⁰⁹

Farming is not year-round employment for the majority of farmers so often they must find some sort of temporary employment during the off-season. Traditionally, a large number of Palestinians have worked in Israel proper. Employment within Israel was higher paying and more stable than most employment within Palestine. However,

¹⁰⁷ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹⁰⁸ Palestinian Central Bureau of Statistics, 2011, Agricultural Census 2010, Press Conference on the Final Results, Ramallah, Palestine.

¹⁰⁹ Mohammad Rashid Shalata family. Interview in Sair Village outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

beginning in the Oslo period Israel stopped allowing Palestinian workers into Israel proper and began a policy of closure. Closing ones borders is the right of a sovereign nation; however, Israel controls all imports and exports from Palestine, as well as the borders thus making Palestinian work in neighboring countries near impossible. This has had a devastating effect on the Palestinian economy. “Under these circumstances not only did Palestinian economic life contract but the prospects for sustained economic development were eclipsed and would remain nonexistent as long as closure continues. (Closure was first introduced in 1991 but imposed as a permanent measure in 1993 and has never been lifted since although its intensity has been subject to change.)”¹¹⁰ This closure policy was further tightened during the 2000 *intifada*. The closure restrictions have been eased over the years but the construction of the Separation Wall and the fact that Israel has largely switched to foreign labor sources continues to hurt Palestinian workers and the economy.

After the mid 1990s, when a large number of Palestinians found themselves unemployed, it was the agricultural sector that was able to absorb these displaced workers. Many returned to family farms or found work renting land or working the land for others. Mr. Jalloud with PARC said that when Israel closed the market and borders all Palestinians working and living in Israel had to move back and stay in Palestine. He said these unemployed workers moved to the agricultural sector. He felt agriculture was a strategic investment that could help combat unemployment and he felt it gave Palestinians more independence. He said there was no real Palestinian industry and there

¹¹⁰ Roy, 80.

was potential for tourism but that this was still very firmly controlled by Israel. He also said that Palestinian services were limited and that there was virtually no IT sector in Palestine. He felt there was no other choice but to work in Palestinian agriculture and that there was no other sector that could tackle the issue of unemployment.¹¹¹ No other sectors in Palestinian society are as well developed as agriculture and Mr. Jalloud stressed the importance of maintaining this sector.

The number of Palestinian youth with college degrees has increased over the years. As this has happened, there has been a shift away from agriculture with the younger generation desiring to work in other, more lucrative fields. “The results [of the PCBS Agricultural Census] indicated that there were 110,104 agricultural holders in the Palestinian Territory, with 28.6% of them in the 40-49 year age group during the agricultural year 2009/2010: this age group made up 28.9% of all agricultural holders in the West Bank and 27.3% in the Gaza Strip.”¹¹² I asked the farmers in the Bardala focus group about the composition of the agricultural labor force. They said there were some farmers who work land that they own themselves, some rent land to work, and others simply work as hired hands on others’ land. They said all age groups were represented in Palestinian agriculture, from young kids just out of school to men working into their 60s.

The effects of Israel’s domination of the Palestinian agricultural sector have made it an unappealing area in which to find work. The Bardala farmers noted that there was

¹¹¹ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

¹¹² Palestinian Central Bureau of Statistics, 2011, Agricultural Census 2010, Press Conference on the Final Results, Ramallah, Palestine.

relatively little profit from Palestinian agriculture and that the younger generation is looking for any other sort of work.¹¹³ Young Palestinians looking for employment will go where the money is and that is not in the agricultural sector. Palestine has an aging farming population and it is unclear what will happen to Palestinian agriculture if this trend continues. Israel's occupation makes many employment opportunities scarce and Palestinians are limited in the types of jobs they can find. Yet, farming is not a profitable business for most and young Palestinians are attempting to find employment elsewhere.

Seeds

If Palestinian farmers manage to retain access to their land and water resources and have the labor to make planting possible, they will need seeds to grow their crops. Traditionally, Palestinian farmers have used the seeds from the previous year's harvest to replant for the next season. This is still the case in many areas of Palestine for farmers who grow for family and local market consumption. Ibrahim, in the Bethlehem market, echoed the prideful assertion that he used the seeds from the previous season's harvest to grow again the next season.¹¹⁴ Many non-commercial farmers are able to survive off of the previous year's harvest.

¹¹³ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹¹⁴ Ibrahim, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

However, commercial large scale Palestinian agriculture has begun importing seeds from Israel. As noted previously, Israel/Palestine is a very arid region suffering from a lack of fresh water. Israel has developed into a highly industrialized nation that prides itself on its scientific and research advances. Israeli scientists have developed genetically modified (GM) seeds that require less water for growth and that thrive in arid climates. These seeds are sold worldwide to farmers facing similar environmental conditions. Even seeds developed in other countries have to come through Israel. Many Palestinian farmers have begun using these genetically engineered seeds. The majority of farmers growing produce in greenhouses were growing from GM seeds. Tomato farmers in Hebron, Hysam and Hytham said that they buy seeds from a nursery in Palestine but the seeds come to Palestine from Israel. They also said that they do not use seeds from the previous year and that buying seeds is expensive because every year Israeli scientists make genetic improvements.¹¹⁵ GM seeds are often infertile and plants grown with them cannot be used to grow future crops. Palestinian farmers become trapped in a cycle where they are forced to continue purchasing seeds from Israel, furthering their dependence.

The farmers in Bardala told me that all of the crops in the Tubas region were grown from hybrid seeds which had to be purchased from Israel. The seeds from one hybrid crop would be completely different the next generation and therefore could not be used to grow new crops. The farmers emphasized that everything brought into Palestine either is from Israel or must pass through Israel. The Israeli government has to agree

¹¹⁵ Hysam and Hytham. Interview in Sair Village, outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

before Palestinian farmers can buy seeds from another country.¹¹⁶ Also, as science advances, so must the Palestinian farmers. Israeli scientists develop new seeds and then these enter the market and Palestinian farmers are forced to buy them, even though the price of the seeds will have likely increased.

While genetically modified seeds can perform better in arid environments, they require additional money from Palestinian farmers. These seeds require specific conditions to grow, deplete the soil of nutrients, and are generally reliant on chemicals to support their growth.

Chemicals

Palestinian commercial farmers, like farmers everywhere, are increasingly dependent on fertilizers and pesticides as well. The PCBS Agricultural Census researched this trend. “Results indicated that 64.9% of all plant and mixed holdings in the Palestinian Territory used organic fertilizers: 34.8% used chemical fertilizers, 49.7% used agricultural pesticides, 25.1% used improved plant assets (seeds, transplants, and tubers), and 18.4% used integrated pest management.”¹¹⁷ These fertilizers and pesticides must be purchased from Israel and the Israeli government has stiff regulations about what types of fertilizers are allowed into Palestine. Both Mr. Feras with ARIJ and Mr. Jalloud with PARC said that the types of fertilizer most necessary for crop growth are ones with high

¹¹⁶ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹¹⁷ Palestinian Central Bureau of Statistics, 2011, Agricultural Census 2010, Press Conference on the Final Results, Ramallah, Palestine.

nitrate content; however, these fertilizers are banned from entering Palestine.¹¹⁸ The Israeli government argues, based on some valid precedent, that Palestinians may make bombs with this type of fertilizer, so it is not allowed. Palestinian farmers are forced to use lower quality fertilizer or illegally procured fertilizers, which carries additional risks. Many farmers use animal manure that has been processed incorrectly and this has negative consequences when Palestinian farmers wish to export their crops, as will be discussed later on. Mr. Feras said that for proper fertilizer farmers need to have fermented animal manure, but Israel controls this type of fertilizer so farmers are forced to look elsewhere. Mr. Feras was very interested in the idea of working on a project to create a Palestinian compost plant.¹¹⁹ He hoped this would reduce Palestinian farmers' dependence on Israeli fertilizer, though with Israel's fear of bomb construction the prospect of Israel allowing such a project is unlikely.

As with genetically modified seeds, small-scale Palestinian farmers are able to avoid reliance on fertilizers and pesticides. Ibrahim, in Bethlehem said that he did not use any chemicals in growing his crops.¹²⁰ Musa also said that he grows crops from the previous year's harvest and does not use chemicals on his produce.¹²¹ Non-commercial farmers are able to maintain a more traditional way of farming and are generally less

¹¹⁸ Feras Badran with ARIJ. Focus group interview in Bardala, Tubas governorate. (10/25/11). Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

¹¹⁹ Feras Badran with ARIJ. Focus group interview in Bardala, Tubas governorate. (10/25/11).

¹²⁰ Ibrahim, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

¹²¹ Musa, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

dependent on Israel for inputs; however, their access to land and water is still dictated by Israel.

The use of fertilizers ties back into the previous discussion on Palestinian land. Fertilizer use depletes the soil and causes farmers to lose productivity. At times, the land must be allowed to lie fallow to recover from fertilizer usage and during this time Palestinian farmers are unable to produce. Not only are Palestinian farmers and the agricultural sector reliant on Israel, but the Palestinian land itself has come to depend on Israel.

Infrastructure

In addition to land, water, labor, seeds, and chemicals, all of the additional inputs for agricultural production are controlled by Israel. Mr. Jalloud with PARC said that the major problems facing Palestinian agriculture are that the inputs and marketing are both being controlled by Israel.¹²² Production of greenhouses entirely depends not only on Israel for permission to build the structure itself, but on Israel for all of the materials that go in to creating the greenhouses. The plastic and metal frames are both created in Israel and then exported to Palestine. The farmers in the Bardala focus group told me that the plastic used to construct greenhouses can only be purchased from Israel. A major universal theme that they highlighted was that all of the agricultural inputs were from Israel and that Palestinians are not allowed to produce agricultural inputs or purchase

¹²² Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

them from other countries without Israeli permission.¹²³ This puts Palestinian farmers completely at the mercy of Israel when it comes to agricultural production.

If Palestinian farmers are given access to enough water to irrigate their crops, they tend to rely on drip agriculture. “In drip irrigation water is transported through pressurized hoses, with evenly spaced micro-holes from which water trickles directly around the plants’ roots. This technology greatly enhances delivery efficiency (due to the virtual elimination of evaporation and seepage losses) and application efficiency (due to the slow and direct trickle of water to the plants’ roots).”¹²⁴ The pipes and tubing used in this type of irrigation are purchased from Israel. In addition, the tanks that water is stored in, both for agricultural and for domestic purposes, are purchased from Israel.

If Palestinians are allowed to build cisterns or wells for water storage, the cement or concrete for these devices is from Israel. In Area C, where cement construction is prohibited, farmers have begun using corrugated sheets of metal lined with plastic to form temporary cisterns to hold rainwater. These are easily deconstructed so farmers can remove them before Israeli authorities are able to destroy them. However, the sheet metal and plastic used for these cisterns is purchased from Israel. Mr. Jalloud with PARC discussed agricultural inputs and said that all of them are from Israel or from abroad (with Israeli permission) and then shipped through and taxed by Israel. Mr. Jalloud said that Israel completely controls Palestine’s borders and therefore can prevent any

¹²³ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹²⁴ Elmusa, *Water Conflict*, 157-158.

competition. He said that the steel companies are all located inside Israel.¹²⁵ Palestinians are trapped in a situation with very little choice but to purchase the necessary inputs from Israel.

After farmers have managed to acquire land and water and purchased irrigation pipeline from Israel, they must find a way to pump the water through the tubes. This requires different types of motors and these motors are either created in Israel or abroad but either way must pass through Israel before reaching Palestinian farmers.

Power

When one thinks of farmers working in the fields, electricity is not the first thing that comes to mind. However, drip agriculture usually relies on a motor to pump the water through the tubing to irrigate the crops. These can be gas powered motors or electric, in either case, both are controlled by Israel. Gas prices can fluctuate and it is difficult for Palestinian farmers to plan for this expense

As mentioned earlier, Israel engages in measures of collective punishment against the Palestinians and this often involves shutting off the water supply. This also includes shutting off all electricity to Palestinian areas. For farmers using electricity to water their crops, this can be catastrophic. In the summer, if crops are without water for even a few days they can be ruined and the farmer will lose a great deal of his produce.

The electricity companies, like the water companies, are Palestinian. The Oslo Accords allowed for the creation of Palestinian infrastructure. However, the water and

¹²⁵ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

electricity ultimately come from Israel so these Palestinians companies are nothing but middlemen passing profits along to the Israeli water and electricity companies. Talking with farmers it seemed that some of them were unaware of the fact that ultimately Israel is the one receiving the money from their water and electricity bills. Ibrahim, in Bethlehem, said he used a motor to take water out of a well on family land to irrigate their crops. He said that electricity is provided to his farm through an electric company in Bethlehem and he said that he felt like he had complete farming independence.¹²⁶ He grew his crops from the previous season's harvest, did not use chemicals, and purchased his electricity from the Bethlehem electric company. He did not realize that the Bethlehem electric company, in the end, buys its electricity from the Israeli power company. The farming family outside of Al-Walajeh village seemed more aware of this situation. They told me that Israel controls all of the water and electricity.¹²⁷ They recognized that the electricity comes from a Palestinian company in Bethlehem but that this is still under Israeli control. Other farmers cited the unreliability of Israeli-controlled electricity in their choice to use gas-powered pumps to keep their crops irrigated.

Transportation

Palestinians are often unable to travel to Israel to purchase agricultural inputs themselves. Permits to travel to Israel are difficult to obtain so many farmers find themselves forced to work through intermediaries and middlemen in order to purchase

¹²⁶ Ibrahim, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

¹²⁷ Family interview in Al-Walajeh village on the outskirts of Bethlehem. Translated by Nathaniel Kahler. (10/22/11).

the necessary inputs. These brokers cost the farmer additional money before the crop can even be grown and increase the initial investment of Palestinian farmers.

Conclusion

Every input necessary for Palestinian farming is firmly under Israeli control. The agricultural sector is dependent on Israeli demand and is very susceptible to water and electricity outages. As a result of agreements in the Oslo Accords the PNA has no influence on any of these agricultural inputs and is equally at the mercy of Israel. Palestinian farmers and international donors may see these initial investments as worthwhile and believe that Palestinian agriculture can still be profitable. However, the purchase and survival of all agricultural inputs remains contingent on an occupying power. Even if agriculture is productive, Palestinian agricultural outputs are also controlled by Israel, as will be discussed in the next chapter.

CHAPTER FOUR – AGRICULTURAL OUTPUTS

External assistance has not established a viable economic system for Palestine, which remains geographically fragmented and heavily dependent on Israel for trade, labor export, and many other things.

-REX BRYNEN, *A Very Political Economy*

Palestinian agriculture is completely dependent on Israel for survival; dependent, not only on the inputs with which to grow crops, but agricultural outputs are also dictated by Israel. This chapter will demonstrate how Israel has much greater power over Palestinian agricultural outputs than the PNA, and how this economic domination of the output side further diminishes the ability of agricultural development to create a self-sufficient agricultural sector in Palestine.

Quality of Product

As mentioned in the previous chapter, water is essential for agricultural growth. Lack of water will necessarily impact crop growth and development. Many vendors with which I spoke told me that the size of Palestinian products was smaller in comparison to their Israeli counterparts. I was told by a merchant named Jalal that it was easy to see which products were from Palestine and which were from Israel. He showed me an example of mint leaves and said that one could visibly tell where the mint was grown. Palestinian mint was shorter than mint grown in Israel because of a lack of water and fertilizer use during the growing process. Palestinian mint was also more expensive because of the high cost of inputs. Jalal sold a small grouping of Palestinian mint for 2

NIS and a larger grouping of taller mint leaves from Israel also for 2 NIS.¹²⁸ The Israeli product was cheaper because it was mass produced and input costs were considerably lower. Additionally, the Israeli government subsidizes much of the Israeli agricultural sector so Israeli farmers do not actually bear the full economic burden.

Agriculture in Palestine has become skewed toward certain crops. Many of the farmers with which I spoke said that they grow ‘light’ crops, meaning crops that do not require much water.¹²⁹ Certain types of crops simply cannot be grown in Palestine due to the precarious water situation, such as wheat and many fruits. A common theme that arose when speaking with farmers was that most of the vegetables were grown in Palestine whereas most of the fruits were grown in Israel. While speaking with Jalal, he said that the fruits in his shop were predominately from Israel and that some of the fruits were not grown anywhere in Palestine, such as pineapples.¹³⁰ A number of vendors told me that apples were mainly from the Golan, the disputed Syrian territory in the North, conquered by Israel in 1967 and annexed in 1981. This was an interesting comment in that some vendors referenced the Golan as Israeli; whereas, others referred to it as Syrian.

Another interesting finding was that many vendors felt that Palestinian produce tasted better than Israeli produce. This sentiment was most common in the Bethlehem area where agriculture is predominately non-commercial and farmers are still able to

¹²⁸ Jalal, interview in Beit Sahour, Greater Bethlehem produce stand. Translated by Nathaniel Kahler (10/19/11).

¹²⁹ Ibrahim, interview in Bethlehem main market. Translated by Nathaniel Kahler (10/19/11).

¹³⁰ Jalal, interview in Beit Sahour, Greater Bethlehem produce stand. Translated by Nathaniel Kahler (10/19/11).

grow crops using seeds from the previous year's harvest and do not need the aid of fertilizers and pesticides. Isa, a vendor in the greater Bethlehem area felt that, "Palestinian produce tastes better because the Palestinian farmers do not use chemicals when farming."¹³¹ A number of vendors and shoppers in Palestinian markets told me that Palestinian produce tasted better for this reason. However, when speaking with farmers in the northern part of the West Bank, in the more commercial agricultural areas, farmers said that there was no difference between the tastes of crops produced in Israel versus those grown in Palestine.¹³² There seemed to be agreement among northern farmers who used fertilizers and pesticides that these chemicals did not affect the crops' tastes.

A major factor affecting commercial agricultural output is the quality tests that Palestinian produce must pass before it is allowed to cross the border into Israel. These are mainly chemical residue tests to ensure the quality and safety of the food being transported into Israel. However, since many types of fertilizers are banned by the Israeli authorities, some Palestinian farmers are forced to use improperly made fertilizer, thus causing the crop to show high chemical traces. These quality tests cost the Palestinian farmers money and they are administered on a pass/fail basis. "Each microbiological test and each pesticide residue test costs NIS 80 and NIS 180, respectively. Results of the microbiological tests are received from the laboratory within 48 hours, and results of the pesticide residue tests are received within 72 hours from the times the sample is handed

¹³¹ Isa, interview in al-Khader/Doha produce market. Translated by Nathaniel Kahler (10/21/11).

¹³² Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

in.”¹³³ If crops fail the quality tests farmers are not given an explanation of the results of the test. The testing process cut into the profits of Palestinian farmers. The farmers in the focus group in Bardala emphasized this point and said that produce can sit at Israeli checkpoints, often in the sun for hours, and by the time farmers are told whether the crops have passed the tests the quality will have diminished.

Markets

The Israeli and Palestinian markets are fundamentally interconnected. Numerous articles and books have been written focusing on this intertwining of the markets; however, I focus on the agricultural connections. The farmers I spoke with in the Bardala region said that 60% of their produce was exported to Israel.¹³⁴ Table 4.1 shows the balance of transfer of fruits and vegetables between Israel and Palestine in 2004. One can see that Palestine dominates in export of vegetables to the Israeli market while it receives most of its fruits from Israel.

¹³³ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 10.

¹³⁴ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

Balance of Transfer of Fruits and Vegetables between the PT and Israel, 2004								
	Unit	From Israel to the PT			From the PT to Israel			Balance
Crop		Total	To Gaza	To the West Bank	Total	From the West Bank	From Gaza	Positive – to Israel*
Vegetables	Tons	24,196	13,639	10,557	75,528	57,145	18,383	(-51,331)
Citrus	Tons	1,659	1,659	0	621	2	619	+1,038
Other fruits	Tons	49,382	49,219	163	1,821	1,705	116	+47,561
*(-) means balance to PT advantage, (+) to Israeli advantage								

Table 4.1 – Balance of Transfer Fruits and Vegetables between the OPT and Israel.

Source: Israeli Ministry of Agriculture, 2005; Diplomacy-Peres, 2007.¹³⁵

Israel is the primary destination for commercial Palestinian agriculture. As mentioned above, the Palestinian produce being exported to Israel must pass certain quality tests before it can cross the border. In addition to this, there is a quota per farmer, per crop, on how much can be exported to Israel daily. “For example, every grower can export ten 14-16 kilogram cases of cucumbers or ten 14-16 kilogram cases of tomatoes a day per dunum.”¹³⁶ Table 4.2 shows the quota amounts for a number of Palestinian crops for the year 2007.

¹³⁵ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 29.

¹³⁶ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 39.

Agricultural Quotas for daily movement to Israel (2007)	
Crop	Per eligible Dunum Quota
Cucumbers	10 boxes daily
Tomatoes	10 boxes daily
Corn	10 boxes daily
Pepper	6 boxes daily
Zucchini	3 boxes daily
Okra	1.5 boxes daily
Grapes	2 tons during the season

Table 4.2 – Agricultural Quotas for daily movement to Israel, 2007.

Source: Data of the Liaison Office of the Israeli Ministry of Agriculture, (Peres-ACF, 2007).¹³⁷

A quota system does not exist for Israeli produce entering Palestine. “Despite the signed agreements between the Israeli and the Palestinian sides regarding the free movement of agricultural commodities for both sides the agreements are only implemented as concerns the movement of Israeli agro-commodities to the Palestinian Territory. The movement of Palestinian commodities to or through Israel to markets abroad is often limited.”¹³⁸ The Bardala farmers accused that, “Israel sends extra crops to Palestine and floods the Palestinian market.”¹³⁹ Israel is able to regulate the quantity and quality of Palestinian

¹³⁷ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 39.

¹³⁸ “Integrated Report for the Palestinian Agro-production Calendar and marketing Potentials for the Local, Israeli and External Markets (Case Study of the Tubas Governorate)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), Action Against Hunger – Spain Palestinian Territories (ACF), The Peres Center for Peace, and The Andreas Agricultural Development Trust, 2008, 39.

¹³⁹ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

produce entering Israeli markets but the PNA has no control over Israeli produce entering Palestine.

A major theme that was mentioned repeatedly by Palestinian farmers, agronomists, and vendors alike was that the market is completely dependent on Israel. They often likened the instability to that of the financial stock market. On days when Israel has a high demand for Palestinian goods, Palestinian farmers fair well and are able to sell most of their crops. However, this is no guarantee, and the next day the border may be closed. In this case the Palestinian market is left unable to cope with the excess of product left behind, and much of the product goes to waste. The Bardala farmers said that local Palestinian markets have a very small capacity and so if Israel closes the border to agricultural imports a lot of Palestinian produce will spoil.¹⁴⁰ It is incredibly difficult for Palestinian farmers to know when and how Israeli demand will fluctuate. Hysam and Hytham, tomato farmers in Sair Village outside of Hebron, said that sometimes they were able to sell their tomatoes for 20 NIS per box, other days the price jumped to 25 NIS, or sometimes dropped to 15 NIS. They said it depended on the market and that there was rarely one day like the last.¹⁴¹ Figure 4.1 shows the drastic changes in price for tomatoes over a four year time period.

¹⁴⁰ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹⁴¹ Hysam and Hytham. Interview in Sair Village, outside of Hebron. Translated by Nathaniel Kahler (10/24/11).

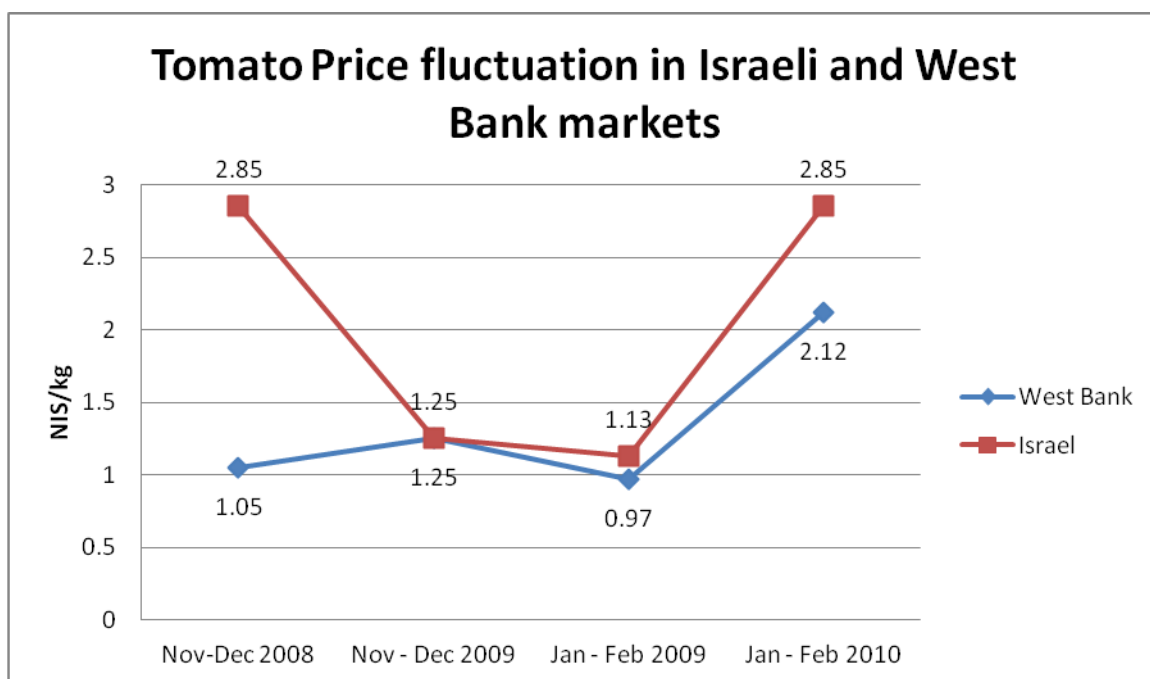


Figure 4.1 – Tomato Price Fluctuation 2008-2010. Source: ARIJ¹⁴²

This instability of the market and the lack of set prices was one of the most often mentioned problems facing Palestinian agriculture that I encountered during my fieldwork there. There was a strong feeling that Palestinians were unable to affect the market at all and a sense of helplessness to the Israeli market.

While most Palestinian produce is sold within Palestine itself or exported to Israel, a small amount is exported abroad. Palestinian farmers often expressed their desire to export to other countries and to open up new trading partners; however, this is virtually impossible because of Israeli control. All Palestinian produce must go through Israel

¹⁴² "Integrated Report for the Palestinian Agro-Production Calendar and Marketing System (Case Study of the Northeast Jordan Valley Area)", prepared by the Applied Research Institute - Jerusalem (ARIJ), in collaboration with Action Against Hunger (ACF), funded by Catalan Agency for Development and Cooperation, 2010, 37.

before it can be exported to another country. The Bardala farmers stated that the export companies refuse to allow them to participate in the export process and refuse to partner with farmers and give them fair prices. They said that Palestinian companies do exist but these groups must still go through Israeli companies, and in that case both would take part of the profit.¹⁴³ This Israeli control over Palestinian exports means that Palestinian farmers lose some of their profit as they must pay Israeli companies to package and sell their produce to other countries, predominately Europe. Many of the farmers expressed their indignation that the PNA has no control over Palestine's borders. Area A is the only administrative district under 'full' Palestinian control but that does not extend to external relations such as trade with other countries. Foreign trade and control of the borders are still dealt with by Israel for the entirety of Palestine.

The farmers in Bardala felt that one of the biggest problems facing Palestinian agriculture was that Palestinian farmers could not export directly to Jordan but must go through Israel first.¹⁴⁴ Jordan is seen as a neighbor and an ally who shares a natural border with Palestine. The farmers did not understand why Israel should need to monitor the trade between Jordan and Palestine and they felt their profits would increase if they could trade directly with Jordan.

¹⁴³ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹⁴⁴ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

Marketing and Certifications

In talking with farmers, one of the major themes that emerged was a complete lack of Palestinian marketing. This sector is non-existent. All Palestinian produce must go through Israel before it is exported abroad. Sara Roy states, “For example, despite the fact that more than half the strawberries exported by Agrexco, Israel’s agricultural export cooperative, originate in Gaza, Gaza cannot export its strawberries under its own brand name.”¹⁴⁵ When produce goes through Israel it is handled by Israeli marketing companies and packaged and sold as Israeli produce. The Bardala focus group said that all Palestinian exports are marketed under the name of an Israeli company. They said that middlemen or mediators take a large cut of the profit; therefore, the focus of Palestinian agriculture was more on local markets¹⁴⁶ than on export. There is no Palestinian agricultural presence in the world market and this bothered a number of the farmers with which I spoke. The Bardala farmers were upset because they stated that there is no recognition of Palestinian agriculture worldwide; that they have no global presence because they are forced to go through Israeli companies if they want to export to Europe.¹⁴⁷ The necessity of having to use an Israeli marketing company, which takes a piece of the profit, to sell Palestinian products under Israeli labels, was a very sore spot for many Palestinian farmers.

¹⁴⁵ Roy, 117.

¹⁴⁶ Local markets meaning Palestinian and Israeli.

¹⁴⁷ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

In order to export abroad Palestinian farmers must gain certain certifications. “There are five certification systems for agriculture and food products in the occupied Palestinian territory. The most common certificate held by Palestinian farmers is the GLOBAL G.A.P, followed by organic certificate, FLO certificate, HACCP certificate and the least common certificate held by farmers is the Hallal certificate. The main certified crops and commodities are tomatoes, olive oil, pepper, peas, onion, mint, and guava.”¹⁴⁸ The most commonly mentioned certification by Palestinian farmers I spoke with was the GLOBAL G.A.P certification which allows farmers to export their produce to Europe. “Most of the agricultural producers and farmers who have applied for the GLOBAL G.A.P certificates did so with the aim to open new potential markets for their products to increase their revenue and to reduce the effects of fluctuating market demand due to seasonality and limitations imposed on the movement of commodities by the Israeli Authorities.”¹⁴⁹ The farmers in the Bardala focus group talked about the GLOBAL G.A.P certification and there was disagreement amongst the farmers in the group over the usefulness of the certification. Some farmers believed that there were no real profits from exporting to Europe. They said the middlemen will take 2 NIS for every 1 NIS they

¹⁴⁸ “Integrated Report for the Palestinian Agro-Production Calendar and Marketing System (Case Study of the Northeast Jordan Valley Area)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), in collaboration with Action Against Hunger (ACF), funded by Catalan Agency for Development and Cooperation, 2010, 37.

¹⁴⁹ “Integrated Report for the Palestinian Agro-Production Calendar and Marketing System (Case Study of the Northeast Jordan Valley Area)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), in collaboration with Action Against Hunger (ACF), funded by Catalan Agency for Development and Cooperation, 2010, 39.

make. They believed that there was money to be made in exporting abroad but that the GLOBAL G.A.P system was corrupt.¹⁵⁰

The criteria farmers must meet for certification are difficult given the Palestinians situation, especially their lack of access to enough water and to proper types of fertilizers. Mr. Jalloud of PARC said that he believed the GLOBAL G.A.P certification was worthwhile but acknowledged that there are still a lot of issues that need to be addressed regarding it.¹⁵¹ Even if farmers gain this certification they are still required to go through Israeli companies to export to Europe and lose profits during this process. Many organizations and companies help support Palestinian farmers and encourage them to obtain a certification. These organizations work with Palestinian farmers to train them in the practices necessary for certification and help with the procedural aspects. However, under current economic restrictions, any certification is still contingent on Israeli cooperation.

There have been instances of international pressure to allow certain areas, such as Gaza, to export to Europe. Generally, Gaza is completely cut off from the outside world. Mr. Jalloud mentioned several cash crop projects in Gaza. He said that the Netherlands invested five million dollars to help farmers in Gaza grow strawberries and flowers for export to Europe. There was Dutch pressure on Israel to open the borders to allow this project to take place. However, the flowers and strawberries still had to be exported

¹⁵⁰ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

¹⁵¹ Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

through Israeli marketing companies. He said it was difficult to export to Europe but “we have to try” and that there were other projects funded by the Netherlands to allow Palestinian agriculture to expand to various markets.¹⁵² European help and pressure can aid in opening the Gaza border but it cannot change the underlying dependence on Israeli marketing to sell Palestinian produce abroad.

Post-Harvest Systems

A major detriment to Palestinian agricultural outputs is the lack of post-harvest systems in the West Bank and Gaza. The Bardala farmers said that Palestine has no post-harvest systems in place. The agricultural produce must be sold fresh or it will spoil. They said there is no system for keeping the produce good for long periods at a time.¹⁵³ There are no storage facilities and no way to keep the product fresh once it has been picked. This means Palestinian farmers must hurry to get their crops to either the Israeli market, Palestinian market, or to Israeli middlemen. If the crop is to be exported to Europe or other foreign countries the Palestinian crops must quickly be sold to Israeli companies who have post-harvest capabilities so the crops can be packaged, labeled as Israeli, and sold abroad. The lack of post-harvest facilities is a limiting factor holding back Palestinian agricultural growth.

¹⁵² Thaer Jalloud with PARC, interview in Ramallah PARC headquarters. (10/27/11).

¹⁵³ Methqal Fuqha, Basam Sawafra, Esam Fuqha, Ashraf Sawafra, Feras Badran with ARIJ. Focus group interview in Bardala village in the Tubas Governorate of the West Bank, Palestine. Translated by Nathaniel Kahler (10/25/11).

Transportation

The Palestinian commercial crops being exported to Israel must go through a “back-to-back” transport system.¹⁵⁴ “The “back-to-back” system is an Israeli regulation that allows certain goods but not vehicles to cross into or from the areas under the PA’s control. Trucks are brought into opens (sic) spaces under strict military supervision, and goods are unloaded from one truck and transferred to the other.”¹⁵⁵ Once the produce is harvested it is placed on-board Palestinian vehicles and taken to checkpoints. Here the produce must pass the required quality tests and the farmers’ paperwork and allotment amounts must be verified. If everything is deemed in order the produce is then moved from the Palestinian vehicles to Israeli vehicles. The produce is often damaged during this transfer process and Palestinian farmers again lose profit.

Conclusion

Every leg of the Palestinian agricultural process is controlled by Israel; from the inputs necessary for crop growth to the fate of the produced outputs. It is difficult to find an aspect of Palestinian agricultural production that is fully in the hands of the Palestinians. Maybe this is to be expected as the Palestinians are a people living under occupation. However, the PNA undertakes agricultural endeavors and claims a certain degree of control over Palestinian agriculture that does not in fact seem to be the case.

¹⁵⁴ “Integrated Report for the Palestinian Agro-Production Calendar and Marketing System (Case Study of the Northeast Jordan Valley Area)”, prepared by the Applied Research Institute - Jerusalem (ARIJ), in collaboration with Action Against Hunger (ACF), funded by Catalan Agency for Development and Cooperation, 2010, 52.

¹⁵⁵ Hever, 37.

PNA support and foreign development aid for agricultural programs pours money into the Israeli economy, further intertwines the Israeli and Palestinian economies, and perpetuates Palestinian dependency on Israel.

CONCLUSION

Israel's control of the Palestinian agricultural sector is profound; its influence is widespread and pervasive. All of the inputs and outputs of Palestinian agriculture are under Israeli control. International funding has been directed toward strengthening the Palestinian agricultural sector, but these development projects do not confront the reality of Israeli geographic, political, and economic domination. In the long run these projects further tie the Palestinian and Israeli economies together and increase Palestinian dependency.

The instability and unpredictability of the market hinders the ability of Palestinian farmers to plan and make rational financial decisions. They are unable to accurately gauge the cost of inputs or the demand for Palestinian crops. Not only is the market itself volatile and constantly changing but so are the rules that Palestinians must follow to sell their crops outside of Palestine. Regulations change randomly and without warning, leaving Palestinian farmers at the mercy of Israeli authorities. As the PNA has no control over its borders or the agricultural inputs and outputs which are permitted at any given time, Palestinian farmers are at an increased disadvantage operating under the imposed regulations of a colonial-settler regime.

The agricultural sector is declining in Palestine and many international and PNA funded organizations are working to reverse this trend. Neve Gordon discusses this decline saying, "despite the more than 40 percent increase in the size of the population, the cultivated land in the West Bank decreased from an estimated 2,435 sq. km. to 1,735

sq. km. between the years 1965 and 1985.”¹⁵⁶ Palestinian land is fertile and agricultural production continues, aided by improvements in technology; however, due to continuing land and water confiscation, the total area available for cultivation has decreased thus impacting the entire agricultural sector. Reversing this decline is difficult, in part because of the concomitant decline in the Israeli agricultural sector. This has been a slow process in Israel. Agriculture has strong historical ties with the ideology of early Labor Zionism, and a strong agricultural lobby in the Israeli Knesset maintains the disproportionate political predominance of Israeli agriculture. However, a shift away in real economic terms has occurred and agriculture composes only a small percentage of the Israeli economy. Israel has largely shifted to the importation of ‘virtual water’. It is cheaper to import water intensive crops from abroad than to grow them inside Israel itself, so Israel has increased imports of these types of crops. As Israel controls the entirety of historic Palestine, they have been able to force this decline on the Palestinian agricultural sector as well. Through control over water resources, land resources, and all agricultural inputs and outputs, Israel seems to be pursuing a strategy to intentionally diminish the Palestinian agricultural sector, though this rationale and reasoning is beyond the scope of this work. What is important is that this forced decline is entirely beyond the control of the PNA and imposed upon the Palestinian agricultural sector. Though development in the Palestinian agricultural sector may provide temporary reliefs or improved infrastructures, it is ineffectual in abating this control or decreasing Palestinian dependency.

¹⁵⁶ Gordon, 130.

There is a lack of control over Palestinian agriculture and the PNA can do little to change the circumstances facing Palestinian farmers. The goal of a self-sufficient Palestinian state is only further undermined by investment in the agricultural sector. Much development aid funds agricultural development projects in Palestine, projects that ultimately benefit Israel in the long run and increase Palestinian dependence on its occupier. These projects remove Israel from the burden of its occupation, isolating it from the costs while benefiting it in revenue and its disproportionate allocation of shared resources. In addition, they further economically entangle Palestine with the economy of occupation, decreasing the feasibility of Palestinian autonomy. Investment in Palestinian agriculture, as it is today, is investment buttressing a system of control and exploitation in which Palestinian agriculture is structurally dependent on Israel.

Looking to the Future

What should be done about this? Should the PNA and development projects give up on agriculture? What other sectors would they invest in? The distinct lack of infrastructure that Israel intentionally maintains hinders Palestinian development and diversification in all sectors. All economic activity and development projects in Palestine would face similar Israeli structural control and constraints. However, the Oslo Accords and the founding of the PNA have led to the creation and maintenance of a burgeoning Palestinian infrastructure. As the situation currently stands, the agricultural sector is most able to absorb Palestinian unemployment. There is almost no IT sector in Palestine and services are few. Palestinian tourism has potential and generates a lot of revenue, but in the end Israel controls the borders, airports, and all access to Palestine and is therefore

ultimately in control of tourism as well. My research, and that of other academics and experts, suggests that international funding should be spent on areas with greater PNA control which have the ability to make Palestine more self-sufficient in the long run such as education and healthcare.

Agriculture is important, especially in a land under occupation. “Israel’s gradual reduction of water quotas to Palestinian farmers forcibly reduced the scope of the West Bank’s agricultural sector, forcing more Palestinian farmers to seek jobs as day laborers in Israel. By 1985 the cultivated land in the West Bank had decreased by 40 per cent. The decrease in the Palestinians’ ability to cultivate land enabled the confiscation of more land.”¹⁵⁷ Farming and producing crops helps to reinforce and demonstrate Palestinian ties to the land. Agriculture identifies the land as Palestinian, an important claim for a group of people fighting for territory in which to create their own state. In the grand scheme of things, however, historic Palestine is a water poor region and the PNA and donors should not focus on developing agriculture. Development aid focused on agriculture is short-sighted and further entrenches Israeli domination of Palestine. A slow move away from agriculture could help reduce one aspect of Palestinian dependence on Israel. International and PNA funding should focus on the development of other sectors and on areas in which Palestine can distance itself from Israeli control and interconnection.

¹⁵⁷ Eyal Weizman, *Hollow Land: Israel’s Architecture of Occupation*. (London: Verso, 2007), 120.

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APPENDIX

The Israeli – Palestinian Interim Agreement

September 28, 1995

Annex III

Article 1: Agriculture

1. This sphere includes, inter alia, veterinary services, animal husbandry, all existing experimental stations, irrigation water (i.e. usage of irrigation water which has been allocated for this purpose), scientific data, forestry, pasture and grazing, licensing and supervision of agriculture, the farming and marketing (including export and import) of crops, fruit and vegetables, nurseries, forestry products, and animal produce.
2. Irrigation water, as well as facilities, water resources, installations and networks used in agriculture are dealt with in Article 40 (Water and Sewage).
3. Relations in the agricultural sphere between the Israeli side and the Palestinian side, including the movement of agricultural produce, are dealt with in [Annex V](#) (Protocol on Economic Relations).
4. The two sides will cooperate in training and research, and shall undertake joint studies on the development of all aspects of agriculture, irrigation and veterinary services.
5. Forestry is part of the Agriculture sphere and is dealt with in [Article 14](#) (Forests).

Article 10: Electricity

Both sides have agreed to continue the negotiations concerning the sphere of Electricity after the signing of this Agreement, with a view to reaching an agreement within three months, based on the following merged version, pending which the existing status quo in the sphere of electricity in the West Bank and the Gaza Strip shall remain unchanged. IEC personnel and equipment shall be guaranteed free, unrestricted and secure access to the electricity grid.

1. The Israeli side shall transfer to the Palestinian side, and the Palestinian side shall assume, all powers and responsibilities in this sphere [I: in Areas A and B] [P: in the West Bank] that are presently held by the military government and its Civil Administration, including the power to set tariffs and issue licenses [P:, as well as all existing property related to this sphere and the grid, as defined in paragraph 4]. [I: In Area C, powers and responsibilities relating to this sphere will be transferred gradually to Palestinian jurisdiction that will cover West Bank and Gaza Strip territory, except for the issues that will be negotiated in the permanent status negotiations, during the further redeployment phases, to be completed within 18 months from the date of the inauguration of the Council.]
2. The Palestinian Energy Authority (PEA) will have the authority to issue licenses and to set rules, tariffs and regulations in order to develop electricity systems [I: under the responsibility of the Palestinian side] in the West Bank. In addition, the PEA shall have the right to construct transmission lines, distribution lines, power stations and the [I: Palestinian part of the] inter-regional electricity connection [I: scheme], in the West Bank. [I: Such construction which is intended to be

- connected or related to the IEC grid, or which is in Area C, shall be subject to prior Israeli consent.]
3. Pending the establishment of an independent Palestinian electricity supply system or of other supply sources, the Israel Electric Company (IEC) shall continue to supply the electricity in order to meet existing and future expected demand in the West Bank. All aspects of supply of electricity to the Palestinian side by IEC shall be dealt with in a commercial agreement, similar to commercial agreements and prices agreed upon for major bulk Israeli consumers.
 4. For the purpose of this Article the term "grid" shall include lines, cables, transformers, substations, circuit-breakers, switches, protection devices and metering equipment, of all different voltage levels. [P: The grid in the West Bank shall be transferred to the Palestinian side] [I: IEC will retain full responsibility for the operation, maintenance and development of the IEC grid. For this purpose IEC personnel, vehicles and equipment shall be entitled to free, unrestricted and secure access to this grid.]
 5. The Israeli side shall retain full responsibility for the [I: supply of electricity to the Israeli settlements and the military locations through the IEC grid.] [P: operation and maintenance of the electricity supply systems within the Israeli settlements and the military locations.]
 6. [I: Subject to the terms of the commercial agreement referred to in paragraph 3 above, which shall include, inter alia, provisions concerning safety and technical standards, dedicated feeders and segments of lines branching from feeders supplying Palestinian consumers, will be transferred to the Palestinian side.] [P:

- The Israeli side shall transfer to the Palestinian side all existing property related to this sphere and the grid, as defined in paragraph 4, in the West Bank.]
7. The PEA will be authorized to implement, in the grid [I: under the responsibility of the Palestinian side] [P: in the West Bank], the outcome of the technical studies currently being undertaken concerning the following:
 - a. The rehabilitation of existing distribution systems.
 - b. Upgrading of protection systems.
 - c. Construction of control systems.
 - d. Implementation of transmission and distribution schemes.
 8. Both sides shall establish a Joint Electricity Subcommittee. The functions of the committee shall be to deal with the issues of mutual interest concerning electricity and to implement the provisions of this Article including, inter alia: finalization of the commercial agreement, cooperation in technical issues and arrangements concerning the transfer of agreed systems.
 9. In light of the proposal that was submitted by President Arafat in the last round of negotiations which was later reassured by Mr. Peres, Israeli Foreign Minister, both sides shall agree on an international arbitration company to deal with the transfer of the electrical grid in the West Bank.

Article 12: Environmental Protection

- A. Transfer of Authority. The Palestinian side and Israel, recognizing the need to protect the environment and to utilize natural resources on a sustainable basis, agreed upon the following:

1. This sphere includes, inter alia, licensing for crafts and industry, and environmental aspects of the following: sewage, solid waste, water, pest control (including anti-malaria activities), pesticides and hazardous substances, planning and zoning, noise control, air pollution, public health, mining and quarrying, landscape preservation and food production.
2. The Israeli side shall transfer to the Palestinian side, and the Palestinian side shall assume, powers and responsibilities in this sphere, in the West Bank and the Gaza Strip that are presently held by the Israeli side, including powers and responsibilities in Area C which are not related to territory. In Area C, powers and responsibilities in this sphere related to territory (which only include environmental aspects of sewage, solid waste, pesticides and hazardous substances, planning and zoning, air pollution, mining and quarrying and landscape preservation) will be transferred gradually to Palestinian jurisdiction that will cover West Bank and Gaza Strip territory except for the issues that will be negotiated in the permanent status negotiations, during the further redeployment phases, to be completed within 18 months from the date of the inauguration of the Council.

B. Cooperation and Understandings

1. Both sides will strive to utilize and exploit the natural resources, pursuant to their own environmental and developmental policies, in a manner which shall prevent damage to the environment, and shall take all necessary

measures to ensure that activities in their respective areas do not cause damage to the environment of the other side.

2. Each side shall act for the protection of the environment and the prevention of environmental risks, hazards and nuisances including all kinds of soil, water and air pollution.
3. Both sides shall respectively adopt, apply and ensure compliance with internationally recognized standards concerning the following: levels of pollutants discharged through emissions and effluents; acceptable levels of treatment of solid and liquid wastes, and agreed ways and means for disposal of such wastes; the use, handling and transportation (in accordance with the provisions of Article 38 (Transportation)) and storage of hazardous substances and wastes (including pesticides, insecticides and herbicides); and standards for the prevention and abatement of noise, odor, pests and other nuisances, which may affect the other side.
4. Each side shall take the necessary and appropriate measures to prevent the uncontrolled discharge of wastewater and/or effluents to water sources, water systems and water bodies, including groundwater, surface water and rivers which may affect the other side, and to promote the proper treatment of domestic and industrial wastewater, as well as solid and hazardous wastes.
5. Both sides shall ensure that a comprehensive Environmental Impact Assessment (EIA) shall be conducted for major development programs,

including those related to industrial parks and other programs detailed in Schedule 2.

6. Both sides recognize the importance of establishing new industrial plants in their respective areas within planned and approved industrial zones, subject to the preparation of comprehensive EIAs, and shall endeavor to ensure compliance with the above.
7. Both sides recognize the importance of taking all necessary precautions to prevent water and soil pollution, as well as other safety hazards in their respective areas, as a result of the storage and use of gas and petroleum products, and shall endeavor to ensure compliance with the above.
8. Pending the establishment of appropriate alternative sites by the Palestinian side, disposal of chemical and radioactive wastes will be only to the authorized sites in Israel, in compliance with existing procedures in these sites. The construction operation and maintenance of the alternative facilities will follow internationally accepted guidelines, and will be implemented pursuant to the preparation of EIAs.
9. Both sides shall cooperate in implementing the ways and means required to prevent noise, dust and other nuisances from quarries, which may affect the other side. To this end the Palestinian side shall take all necessary and appropriate measures, in accordance with the provisions of this Agreement, against any quarry that does not meet the relevant environmental standards.

10. Both sides recognize the importance of taking all necessary and appropriate measures in their respective areas for the monitoring and control of insect-transmitted diseases including sand flies, anopheles and all other mosquito species, and shall endeavor to ensure compliance with the above.
11. Both sides shall cooperate in implementing internationally accepted principles and standards relating to environmental issues of global concern, such as the protection of the ozone layer.
12. Israel and the Palestinian side shall cooperate in implementing principles and standards, which shall conform with internationally accepted principles and standards, concerning the protection of endangered species and of wild fauna and flora, including restriction of trade, conservation of migratory species of wildlife and preservation of existing forests and nature reserves.
13. Israel and the Palestinian side shall respectively operate an emergency warning system in order to respond to events or accidents which may generate environmental pollution, damage or hazards. A mechanism for mutual notification and coordination in cases of such events or accidents will be established.
14. Recognizing the unsatisfactory situation of the environment in the West Bank, and further recognizing the mutual interest in improving this situation, Israel shall actively assist the Palestinian side, on an ongoing basis, in attaining this goal.

15. Each side shall promote public awareness on environmental issues.
16. Both sides shall work on appropriate measures to combat desertification.
17. Each side shall control and monitor the transfer of pesticides and any internationally banned and restricted chemicals in their respective areas.
18. Each side shall reimburse the other for environmental services granted in the framework of mutually agreed programs.
19. Both sides shall cooperate in the carrying out of environmental studies, including a profile, in the West Bank.
20. For the mutual benefit of both sides, the relevant Israeli authorities and the Palestinian Environmental Protection Authority and/or other relevant Palestinian authorities shall cooperate in different fields in the future.

Both sides will establish an Environmental Experts Committee for environmental cooperation and understandings.

Article 14: Forests

1. Powers and responsibilities in the sphere of Forests in the West Bank and the Gaza Strip shall be transferred from the military government and its Civil Administration to the Palestinian side. This sphere includes, inter alia, the establishment, administration, supervision, protection, and preservation of all forests (planted and unplanted).
2. In Area C, powers and responsibilities related to the sphere of Forests will be transferred gradually to Palestinian jurisdiction that will cover West Bank and Gaza Strip territory except for the issues that will be negotiated in the permanent

status negotiations, during the further redeployment phases, to be completed within 18 months from the date of the inauguration of the Council.

3. The Palestinian side shall safeguard, protect and preserve all forests in the West Bank and the Gaza Strip. The Palestinian side shall take all necessary measures to ensure the protection and prevention of damage to said forests.
4. The Palestinian side shall have the right to plant new forests for, inter alia, protection of soil from erosion and desertification, and landscaping purposes, bearing in mind safety and security considerations concerning main roads and infrastructure.
5. Both sides shall cooperate in matters regarding the protection and preservation of forests, including fire extinguishing and pest control, and shall exchange information on issues relating to pests, diseases and scientific research.
6. The Israeli side shall coordinate with the Palestinian side activities in Area C, outside Settlements and military locations, which may change the existing status of this sphere.

Article 40: Water and Sewage

On the basis of good-will both sides have reached the following agreement in the sphere of Water and Sewage:

Principles

1. Israel recognizes the Palestinian water rights in the West Bank. These will be negotiated in the permanent status negotiations and settled in the Permanent Status Agreement relating to the various water resources.
2. Both sides recognize the necessity to develop additional water for various uses.
3. While respecting each side's powers and responsibilities in the sphere of water and sewage in their respective areas, both sides agree to coordinate the management of water and sewage resources and systems in the West Bank during the interim period, in accordance with the following principles:
 - a. Maintaining existing quantities of utilization from the resources, taking into consideration the quantities of additional water for the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank as detailed in this Article.
 - b. Preventing the deterioration of water quality in water resources.
 - c. Using the water resources in a manner which will ensure sustainable use in the future, in quantity and quality.
 - d. Adjusting the utilization of the resources according to variable climatological and hydrological conditions.
 - e. Taking all necessary measures to prevent any harm to water resources, including those utilized by the other side.
 - f. Treating, reusing or properly disposing of all domestic, urban, industrial, and agricultural sewage.
 - g. Existing water and sewage systems shall be operated, maintained and developed in a coordinated manner, as set out in this Article.

- h. Each side shall take all necessary measures to prevent any harm to the water and sewage systems in their respective areas.
- i. Each side shall ensure that the provisions of this Article are applied to all resources and systems, including those privately owned or operated, in their respective areas.

Transfer of Authority

- 4. The Israeli side shall transfer to the Palestinian side, and the Palestinian side shall assume, powers and responsibilities in the sphere of water and sewage in the West Bank related solely to Palestinians, that are currently held by the military government and its Civil Administration, except for the issues that will be negotiated in the permanent status negotiations, in accordance with the provisions of this Article.
- 5. The issue of ownership of water and sewage related infrastructure in the West Bank will be addressed in the permanent status negotiations.

Additional Water

- 6. Both sides have agreed that the future needs of the Palestinians in the West Bank are estimated to be between 70 - 80 mcm/year.
- 7. In this framework, and in order to meet the immediate needs of the Palestinians in fresh water for domestic use, both sides recognize the necessity to make available to the Palestinians during the interim period a total quantity of 28.6 mcm/year, as detailed below:

a. Israeli Commitment:

- i. Additional supply to Hebron and the Bethlehem area, including the construction of the required pipeline - 1 mcm/year.
- ii. Additional supply to Ramallah area - 0.5 mcm/year.
- iii. Additional supply to an agreed take-off point in the Salfit area - 0.6 mcm/year.
- iv. Additional supply to the Nablus area - 1 mcm/year.
- v. The drilling of an additional well in the Jenin area - 1.4 mcm/year.
- vi. Additional supply to the Gaza Strip - 5 mcm/year.
- vii. The capital cost of items (1) and (5) above shall be borne by Israel.

b. Palestinian Responsibility:

1. An additional well in the Nablus area - 2.1 mcm/year.
2. Additional supply to the Hebron, Bethlehem and Ramallah areas from the Eastern Aquifer or other agreed sources in the West Bank - 17 mcm/year.
3. A new pipeline to convey the 5 mcm/year from the existing Israeli water system to the Gaza Strip. In the future, this quantity will come from desalination in Israel.
4. The connecting pipeline from the Salfit take-off point to Salfit.
5. The connection of the additional well in the Jenin area to the consumers.

6. The remainder of the estimated quantity of the Palestinian needs mentioned in paragraph 6 above, over the quantities mentioned in this paragraph (41.4 - 51.4 mcm/year), shall be developed by the Palestinians from the Eastern Aquifer and other agreed sources in the West Bank. The Palestinians will have the right to utilize this amount for their needs (domestic and agricultural).

8. The provisions of paragraphs 6-7 above shall not prejudice the provisions of paragraph 1 to this Article.

9. Israel shall assist the Council in the implementation of the provisions of paragraph 7 above, including the following:

a. Making available all relevant data.

b. Determining the appropriate locations for drilling of wells.

10. In order to enable the implementation of paragraph 7 above, both sides shall negotiate and finalize as soon as possible a Protocol concerning the above projects, in accordance with paragraphs 18 - 19 below.

The Joint Water Committee

11. In order to implement their undertakings under this Article, the two sides will establish, upon the signing of this Agreement, a permanent Joint Water Committee (JWC) for the interim period, under the auspices of the CAC.

12. The function of the JWC shall be to deal with all water and sewage related issues in the West Bank including, inter alia:

- a. Coordinated management of water resources.
- b. Coordinated management of water and sewage systems.
- c. Protection of water resources and water and sewage systems.
- d. Exchange of information relating to water and sewage laws and regulations.
- e. Overseeing the operation of the joint supervision and enforcement mechanism.
- f. Resolution of water and sewage related disputes.
- g. Cooperation in the field of water and sewage, as detailed in this Article.
- h. Arrangements for water supply from one side to the other.
- i. Monitoring systems. The existing regulations concerning measurement and monitoring shall remain in force until the JWC decides otherwise.
- j. Other issues of mutual interest in the sphere of water and sewage.

13. The JWC shall be comprised of an equal number of representatives from each side.

14. All decisions of the JWC shall be reached by consensus, including the agenda, its procedures and other matters.

15. Detailed responsibilities and obligations of the JWC for the implementation of its functions are set out in [Schedule 8](#).

Supervision and Enforcement Mechanism

16. Both sides recognize the necessity to establish a joint mechanism for supervision over and enforcement of their agreements in the field of water and sewage, in the West Bank.

17. For this purpose, both sides shall establish, upon the signing of this Agreement, Joint Supervision and Enforcement Teams (JSET), whose structure, role, and mode of operation is detailed in [Schedule 9](#). Water Purchases

18. Both sides have agreed that in the case of purchase of water by one side from the other, the purchaser shall pay the full real cost incurred by the supplier, including the cost of production at the source and the conveyance all the way to the point of delivery. Relevant provisions will be included in the Protocol referred to in paragraph 19 below.

19. The JWC will develop a Protocol relating to all aspects of the supply of water from one side to the other, including, inter alia, reliability of supply, quality of supplied water, schedule of delivery and off-set of debts.

Mutual Cooperation

20. Both sides will cooperate in the field of water and sewage, including, inter alia:

- a. Cooperation in the framework of the Israeli-Palestinian Continuing Committee for Economic Cooperation, in accordance with the provisions of Article XI and Annex III of the Declaration of Principles.
- b. Cooperation concerning regional development programs, in accordance with the provisions of [Article XI](#) and [Annex IV](#) of the Declaration of Principles.
- c. Cooperation, within the framework of the joint Israeli-Palestinian-American Committee, on water production and development related projects agreed upon by the JWC.
- d. Cooperation in the promotion and development of other agreed water related and sewage-related joint projects, in existing or future multi-lateral forums.
- e. Cooperation in water-related technology transfer, research and development, training, and setting of standards.

f. Cooperation in the development of mechanisms for dealing with water-related and sewage related natural and man-made emergencies and extreme conditions.

g. Cooperation in the exchange of available relevant water and sewage data, including:

(1) Measurements and maps related to water resources and uses.

(2) Reports, plans, studies, researches and project documents related to water and sewage.

(3) Data concerning the existing extractions, utilization and estimated potential of the Eastern, North-Eastern and Western Aquifers (attached as Schedule 10).

Protection of Water Resources and Water and Sewage Systems

21. Each side shall take all necessary measures to prevent any harm, pollution, or deterioration of water quality of the water resources.

22. Each side shall take all necessary measures for the physical protection of the water and sewage systems in their respective areas.

23. Each side shall take all necessary measures to prevent any pollution or contamination of the water and sewage systems, including those of the other side.

24. Each side shall reimburse the other for any unauthorized use of or sabotage to water and sewage systems situated in the areas under its responsibility which serve the other side.

The Gaza Strip

25. The existing agreements and arrangements between the sides concerning water resources and water and sewage systems in the Gaza Strip shall remain unchanged, as detailed in Schedule 11.

